

Esso Highlands Limited



Papua New Guinea LNG Project

**TUMBI QUARRY (QA1)
Resettlement Action Plan**

PGHU-EH-SPZZZ-410003

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ACRONYMS

Acronym	Definition
ANUE	Australian National University Enterprises
BPEA	Best Practices in External Affairs
BSA	Benefit Sharing Agreement
EHL	Esso Highlands Limited
EIS	Environmental Impact Statement
ELC	Environmental Law Centre
FN	Family Number
FRV	Full Replacement Value
GDC	Gigira Development Corporation
HGCP	Hides Gas Conditioning Plant
HGCP RAP	Hides Gas Conditioning Plant Resettlement Action Plan
HGDC	Hides Gas Development Corporation
HHR	Heavy Haul Road
HQ1-3	Hides Quarries Sites 1, 2 and 3
IBD	Interest Bearing Deposit
IFC	International Finance Corporation
ILG	Incorporated Land Group
IPA	In-Principle Agreement (now referred to as an IPCA)
IPCA	In-Principle Compensation Agreement
KAAR	Komo Airstrip Access Road
KLF (KL)	Kopeanda Landfill
Lanco	Landowner Company
LBBSA	License-Based Benefit Sharing Agreement
LNG	Liquefied Natural Gas
LR	Livelihood Restoration
M&E	Monitoring and Evaluation
MUAC	Mid Upper Arm Circumference
O&GA	Oil and Gas Act
OIMS	Operations Integrity Management System
OSL	Oil Search Limited
PDLs	Petroleum Development License
PIA	Project Impacted Area
PNG	Papua New Guinea
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PRL	Petroleum Retention License

Acronym	Definition
PS	Performance Standard
RAP	Resettlement Action Plan
RIT	RAP Implementation Team
RPF	Resettlement Policy Framework
RTC	Resettlement Team Coordinator
SHP	Southern Highlands Province
SIA	Social Impact Assessment
SMLI	Social Mapping and Landowner Identification
UBSA	Umbrella Benefits Sharing Agreement
VG	Papua New Guinea Valuer General
WMA	Waste Management Area

EXECUTIVE SUMMARY

Introduction

Esso Highlands Limited (Company) proposes to develop the Papua New Guinea (PNG) Liquefied Natural Gas (LNG) Project (Project) to commercialize the gas reserves within the Southern Highlands and Western Provinces of PNG. Tumbi Quarry, known as QA1, is required for aggregate to be used by the Project in the Komo area. The Project will be leasing the quarry from Hides Gas Development Corporation (HGDC) for an estimated two-year period, depending on aggregate requirements of the Project, after which the quarry will be returned to HGDC.

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 livelihoods and standards of living. This Resettlement Action Plan (RAP) (referred to as the QA1 RAP) is consistent with the goals, principles, and processes set out in the Resettlement Policy Framework developed for the Project (October 2009).

Institutional and Legal Framework

The resettlement process will comply with all legal requirements and criteria, such as those specified in the Oil and Gas Act, key PNG National Government institution guidelines, legislation governing provincial and local governments, and the International Finance Corporation's Performance Standards on Social and Environmental Sustainability.

The Social, Economic and Cultural Environment

QA1 lies wholly within the Komo-Margarima District in the Southern Highlands Province (SHP). The Huli ethnic group inhabits the area. As in all other resettlement affected Huli catchments, the Project has relied upon self-relocation programs to produce the best sustainable outcomes for physically displaced people.

Socio-Economic Surveys and Baseline Status

Baseline research has involved a census and assets register, socio-economic, and land-use surveys using geo-referencing to identify households, land ownership and usage patterns. The QA1 site has 22 affected households, of which 14 will require physical relocation as their current houses are within the Project area and eight will experience economic displacement due to loss of gardens. Four of the latter will also qualify for physical displacement, as the majority of their gardens will be impacted. A total of 144 household members were recorded, of whom approximately 98 will require physical relocation. Approximately 37% of household members were absent at the time of the survey, the bulk of whom were resident in Tari.

Forty percent of the populace were literate with 50% of school-age children attending school. Sixty-seven percent of persons aged 15+ have had no formal education: 59% of males, and 73% of females. Only 1% of surveyed household members had reached Grade 10 or higher.

Most members of the community were engaged in productive activity for subsistence production. Formal employment opportunities in the area were low, being limited mainly to labor, security and camp maintenance opportunities, with the result that only 11% were

engaged in formal employment. Levels of reported income and expenditure were similar to findings for the general Hides catchment.

Consultation and Disclosure for QA1

Resettlement public consultations in the QA1 area commenced in November 2010 and are ongoing. A representative QA1 Committee was established, following agreement with all site residents. Communication mediums included oral presentations, flip charts, booklets and flyers in English, Pidgin and Huli. The Environmental Law Centre played an active monitoring and review role as an impartial observer, and assisted affected people with participation in the resettlement process on an informed basis. A process of disclosure of documents is in place. This will include public dissemination and distribution of the QA1 RAP, provision of all agreements in Huli and Pidgin, and a Huli translation of the executive summary for public distribution.

Project Impacts

The list below summarizes the main impacts expected to affect QA1 households, along with proposed mitigation:

- Fourteen households will be physically displaced, with 17 structures affected. A further four households were identified as eligible for physical displacement packages as the majority of their garden areas will be affected, thus potentially requiring full relocation. Four additional households will be economically displaced, with portions of their gardens impacted, while approximately 180 households/individuals will receive minor compensation for affected trees. At the time of writing all physically impacted households have identified potential resettlement sites;
- The required land access area totals approximately 15 ha. According to the In-Principle Compensation Agreement, compensation for the loss of access to this area and any destruction thereof, estimated at 10 ha, will be paid to the land owning clans, which includes the Ware, Imini (Gela), Bebe and Warabia;
- The cultivated garden area within the 15 ha site was 2.9 ha, consisting of 50 gardens belonging to 22 households, 37 of which belong to physically impacted households. A total of 9,316 coffee trees (mainly seedlings), 31 pandanus, 138 casuarinas, 16 castanopsis, one black palm, 472 bamboo, and 1,352 various crops and trees were also counted in the survey, and will be compensated. Households will receive compensation for garden and tree losses at the equivalent of full replacement value;
- Disruption in social networks is expected to be minimal, as the majority of affected households have indicated that they will move short distances away from the current site;
- No trade stores were found within the affected area, and no loss of employment is anticipated;
- No community infrastructure will be impacted by the development. Access across the site will be restricted by a demarcation fence. A footpath will be constructed around the northern portion of the site to provide alternative access around the site. The access track will be completed before site access is restricted by the demarcation fence;

- Relocated individuals will benefit from the region-wide community infrastructure that will eventuate both from the Project discretionary programs and the Government commitments made in the License-Based Benefit Sharing Agreement;
- The primary water source currently used by displaced households is at the base of the proposed quarry site and will thus be impacted. The compensation package allows all resettled households to erect rain storage tanks, and water collection *haus wins* will be erected for the indirectly affected community through a consultative process;
- Nine cultural heritage sites will be impacted by the development. These will be compensated as per the Company Cultural Heritage Management Plan; and
- Regional population increase and influx may arise due to construction activities, improved services and employment opportunities.

Compensation and Resettlement Strategy

Those households subject to economic displacement are eligible to receive damage and deprivation compensation as well as livelihood restoration. Those households subject to physical displacement are eligible to receive the same types of compensation as well as a resettlement assistance package of K51,000 including part cash, and a deposit into an interest bearing savings account, or a deferred payment option for either six or 12 months. The Project provides the services of a Compensation and Business Advisor, who will advise and consult with affected people on money management, and potential business and investment opportunities.

Compensation will be paid to clans for damage and deprivation to land. This will include annual rental well as payments for initial damage/exclusion (15 ha) and permanent damage to surface area (10 ha). Clans eligible to receive this compensation are the Ware, Imini (Gela), Bebe and Warabia clans. The clan leaders are still to agree on the allocation of land between clans.

Once the total amount has been defined by the Project in an In-Principle Compensation Agreement with landowning clan leaders, and an Agency Agreement is executed firmly establishing the compensation owed, the compensation damage amount is accrued as a liability by the Company until payment can proceed. Payments will accrue for the duration of the period over which the quarry is utilized, expected to be three to four years initially.

Allocation of land between clans is agreed through a process of mapping and consultation. The clan areas are mapped on each site by the Project with the participation of local clan leaders. When payments are made to the clans, the clans will distribute the compensation in accordance with customary clan principles to clan members.

Livelihoods Restoration

Apart from compensation payments, livelihood restoration programs will be implemented to give physically and economically displaced persons the opportunity to at least restore their livelihoods and standards of living. These programs include land-based as well as non land-based activities.

Grievance Management Framework

The objective of the Project 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 thereby avoiding escalation of the issue.

Organizational Roles and Responsibilities

Responsibility for the planning, implementation, and monitoring of the QA1 resettlement program rests with the Company and the Company's Socioeconomic team undertaking these activities, and supported by Community Affairs personnel. Adequate resources and effective management will be allocated to ensure that the QA1 RAP is developed and implemented with the participation of affected people and communities in a timely manner.

Monitoring and Evaluation

Monitoring and evaluation will provide information on whether compensation, resettlement, and development investments are providing positive inputs, and to indicate the need for corrective action that may be required to achieve Project goals. An independent third party will conduct the final completion audit to determine whether the Project's undertakings to give physically and economically displaced persons the opportunity to at least restore their livelihoods and standards of living were properly conceived and executed, and have had the intended outcome measured against pre-resettlement baseline conditions.

Resettlement Implementation Schedule

A schedule of tasks has been developed to implement the major components of resettlement over an expected four-month period, with livelihood restoration and monitoring continuing for two years.

Cost and Budget Estimate

The budget has been approved by the Company, and additional budget for contingencies will be made available as needed. The cost of the QA1 resettlement is estimated at approximately US\$1.45 million, including In-Principle Compensation Agreement clan payments. In addition the landowning clans will receive an annual rental of K700/ha.

1.0 INTRODUCTION

This Resettlement Action Plan (RAP) focuses on the resettlement of people currently residing on a site known as QA1 (Figure 1-1). The Huli ethnic group inhabits the site.

QA1 is an existing quarry belonging to the Hides Gas Development Corporation (HGDC) that is located on the Idauwi to Hides Gas Conditioning Plant (HGCP) road, approximately 2.6 km southwest of Nogoli Transit Camp. The quarry is located on a limestone surface expression in the hill slopes above the Tagari River. The existing quarry, commonly referred to as Tumbi and sometimes Mbalupa (Mbelopa), is to be re-developed with possible quarrying into the surrounding area. The outer area of the worksite on the west, north and south sides is to be used for the storage of topsoil and spoil overburden from the quarried area within the Quarry QA1 worksite.

The proposed Tumbi Quarry QA1 worksite encompasses a surface area of approximately 15 ha, of which 10 ha will be used for quarry and related activities, including an access road, spoil area and material processing area, while the remaining 5 ha will serve as a buffer around the site, and lie between work areas (Figure 1-1). The buffer area to be used is minimal, primarily aimed to restrict access to the site, as no blasting will be undertaken.

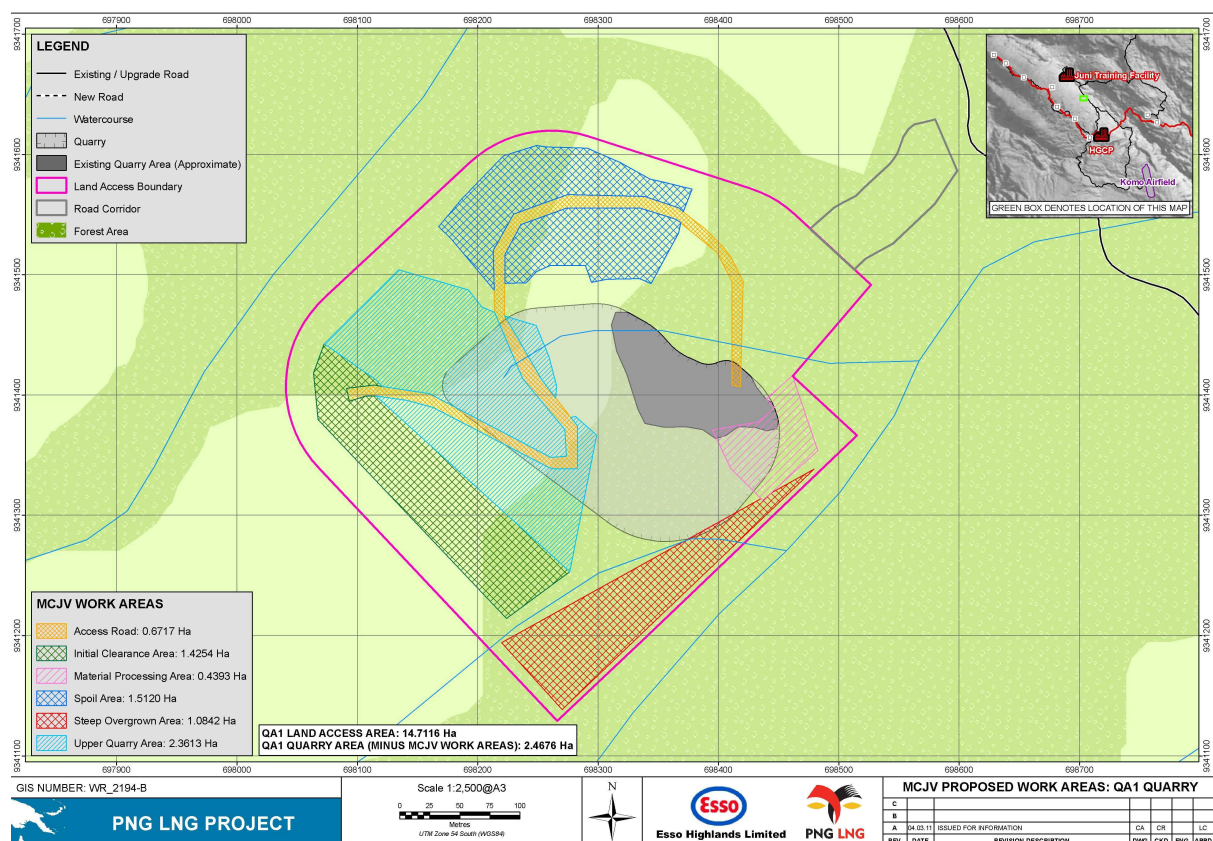


Figure 1-1: QA1 Site Land-use Plan

The quarry will be leased from HGDC for an estimated period of two years. This will be reviewed during 2012 according to the remaining aggregate requirements of the Project. The site will revert to the current owners (HGDC) after this period.

1.1 Description of the Project

The Papua New Guinea (PNG) Liquefied Natural Gas (LNG) Project (Project) will commercialize 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 Company is the operator of the Project. The Project will be implemented through a joint venture between licensees representing the following participating interests: Esso Highlands Limited as operator, Oil Search Limited (OSL), Santos Limited, Nippon Oil Exploration Limited and the Independent State of Papua New Guinea and Mineral Resources Development Ltd representing landowners.

1.2 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 livelihoods and standards of living.

This RAP is consistent with the goals, principles, and processes set out in the Resettlement Policy Framework (RPF).

1.3 Sources of Information

Key sources of information used in the preparation of this RAP include:

- International Finance Corporation (IFC) Performance Standards (PS) including PS 5 Land Acquisition and Involuntary Resettlement, PS 4 Community Health and Safety and Security, and PS 7 Indigenous People;
- Papua New Guinea Liquefied Natural Gas Project Environmental Impact Statement (EIS) and Social Impact Assessment (EIS SIA Appendix 26) (2009);
- Census and survey results for the affected area;
- Komo Airstrip, Komo Airstrip Access Road (KAAR), Hides Quarries (HQ)1-3 and HGCP RAPs;
- Petroleum Development License (PDL) 1, Petroleum Retention License (PRL) 11 Social Mapping and Landowner Identification studies (SMLIs);
- National Content Plan (outlines workforce development, local business development, investment in strategic community programs);
- Assimilation of lessons learned in other resource developments in PNG and especially adjacent to the Project - e.g., petroleum hubs of Moran, Mananda, Gobe, and Kutubu, gold at Kare and Porgera, mining at Lihir¹; and

¹ PNG Chamber of Mines & Petroleum (2000), Landowner Compensation in PNG Mining & Petroleum Sectors, which includes comparison of resettlement packages and history for Ok Tedi, Porgera, Lihir, Misima and Panguna.

- 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, the Company's Policy on Human Rights).

1.4 Site Selection and Avoiding/Limiting Resettlement

QA1 quarry was in existence prior to commencement of Project activities in the area. QA1 was under the control of the local Lanco, HGDC, and supplied low-grade aggregate for local road use. Since commencement of Project activities, volumes approaching approximately 100,000 cubic meters of material from this quarry have been extracted by C1 (Infrastructure) and EPC5B (Komo Airfield). The wider Hides/Komo area has limited availability of accessible/useful aggregate material. The Project's major consideration in the site selection process was to ensure minimum impact on the local communities.

The Project considered an alternative site KQ5 (Figure 1-2) for the main supply of aggregate required for both the airfield and Heavy Haul Road (HHR) construction. The land access requirement for KQ5 was 56 ha. Test drilling undertaken earlier this year indicated supplies in this area had significant overburden (up to 12 meters), making any extraction of source aggregate unviable. In total, some 65 houses and two churches were located within the boundaries of the land area required. Furthermore, the pre-construction survey environmental findings indicated high priority cultural heritage findings within the immediate quarry boundary.

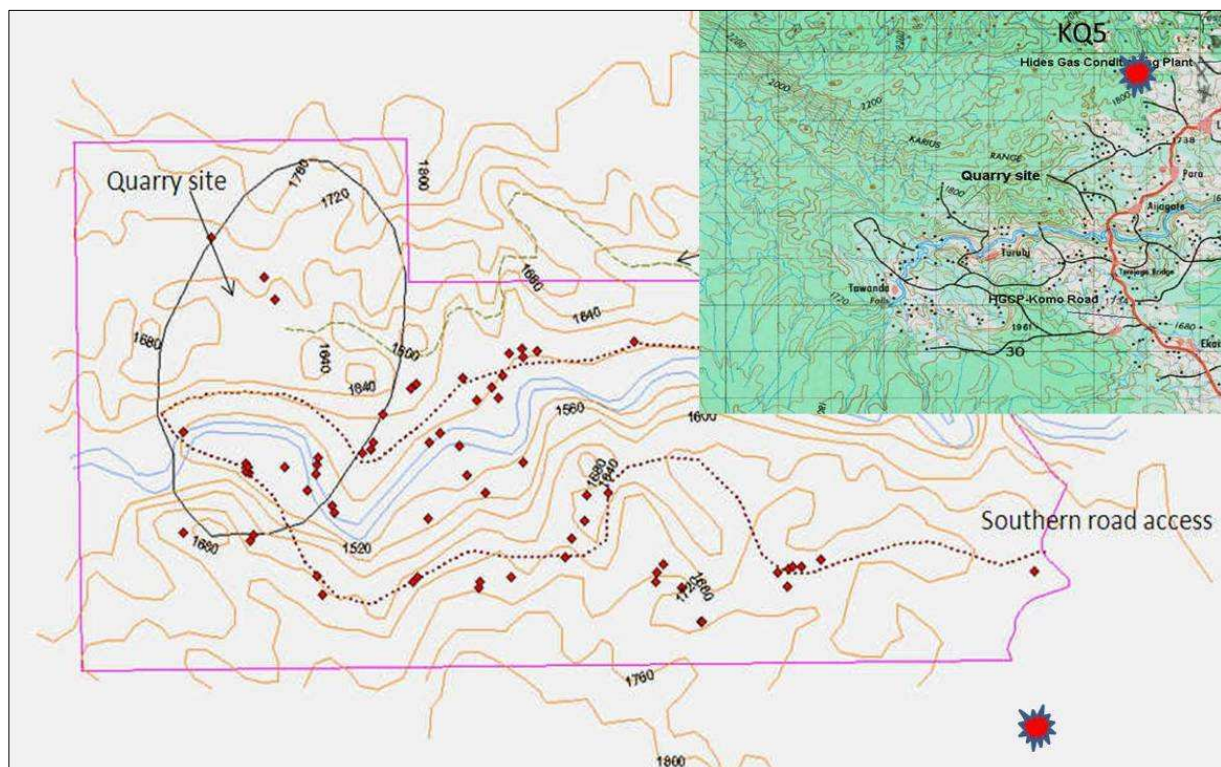


Figure 1-2: Prospective KQ5 Quarry Site

A second area near the Timalia Bridge (enlargement of the Obai area –

Figure 1-3) was also reviewed as a possible source of aggregate sufficient to meet Project requirements.

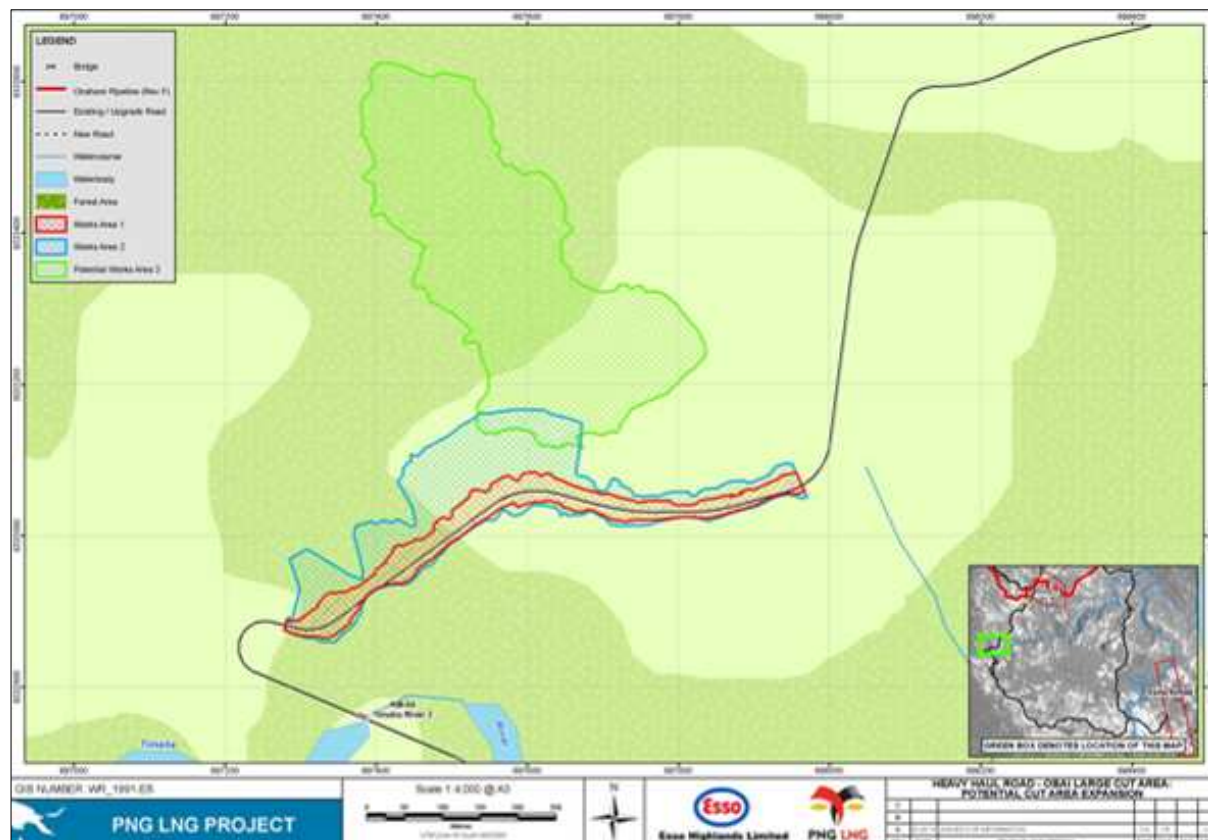


Figure 1-3: Prospective Obai Quarry Site

While the Obai area is required to be developed to meet Department of Works road design criteria, and the material sourced from this cut will supply some useable aggregate, test drilling of the area behind that cut has indicated that there is no useable aggregate in the enlargement area.

A third area known as Timalia Borrow Pit (TB 1) (Figure 1-4) was also considered given the current plan to develop it as a source of high grade boulder aggregate required for civil works and concrete/asphalt usage. However, while this area is still under consideration for higher-grade concrete aggregate, it will not be able to supply the limestone aggregate required for other construction usages of the EPC5B Project.



Figure 1-4: Prospective Timalia Borrow Pit Site

Given that QA1 was already in use and the planned intervention would result in minimal further impact or disturbance to the local communities, QA1 was deemed the most suitable of all the candidate sites. Any new quarry and supporting road development would have entailed a greater scale of involuntary resettlement. Moreover, the existing road system to the QA1 already carries Project traffic.

2.0 INSTITUTIONAL AND LEGAL FRAMEWORK

The Land Act (1996) and Oil and Gas Act (O&GA, 1998) are the principal PNG legislation relating to land, compensation and resettlement. PNG does not have a formal resettlement policy or statute. The QA1 RAP, as is the case with all other Project RAPs, conforms to the requirements of PS 5 (Land Acquisition and Involuntary Resettlement) of the IFC. Further details are available in the HGCP RAP² (Section 2.0).

² Esso Highlands Limited PNG LNG Project Hides Gas Conditioning Plant RAP of May 2010 (Revised November 2010).

3.0 OVERVIEW OF QA1 SOCIAL BASELINE RESOURCES

Various baseline studies have been undertaken in the QA1 area to provide an understanding of the socio-economic conditions of the area. These are described below:

The pre-resettlement socio-economic baseline survey as it relates to the QA1 area consisted of the following:

- Social Mapping and Landowner Identification studies; and
- Social Impact Assessments including cultural heritage surveys.

The RAP Implementation Team and the Census and Survey Team undertook further refined studies to obtain more specific and contemporary information about impacted individuals, households, land holdings and attitudes. This research included:

- 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;
- An individual health survey which provides a baseline for ongoing healthcare both during and after the resettlement process; and
- A cultural heritage survey to support the suite of QA1 area investigations.

The information from these surveys contributes to the development of options for livelihood support and community development training and agriculture.

4.0 THE SOCIAL, ECONOMIC, AND CULTURAL ENVIRONMENT

The QA1 area lies wholly within the Southern Highlands Province (SHP) of PNG. Within the SHP, the area falls within the Komo-Margarima District.

The first recorded agreement for the use of the Tumbi quarry was between landowners and Kinhill Engineering for the construction of the Hides Gas Project. This agreement was subsequently renewed by BP in 1996 and then OSL over an area of 4.2 ha. The quarry site had a contested land ownership history eventually resolved amicably by the parties. In addition to excavation of material, the quarry had been used by security and police for firearms training.

4.1 Cultural Aspects

4.1.1 Background to the Occupation of the QA1

A detailed history of the Hides-Komo area is contained in the Komo Airstrip and HGCP RAPs.

Table 4-1 provides a summary of the principal resettlement clans recorded for the QA1 area (land survey) with comparison against other surveys undertaken for the wider area, all of which confirm the clans identified in the QA1 survey.

Table 4-1: QA1 Resettlement Principal Clan Listing

Land Survey	Cultural Heritage Survey	SMLI 2008- Main Clans	L&CA 2010	OSL L&CA3
Ware	Hirabia (Pini)	Ware ⁴	Ware (Haria sub-clan)	Ware
Imini (Gela)	Touglape	Pade	Imini	Imini
Bebe	Imini (Gela)	Bebe/Mbele	Pade	Pade
Warabia	Naeya	Warabia	Bebe	Bebe
	Ware			
	Imini			
	Mbele			
	Pepe			

4.1.2 Ancestral Land Rights

The QA1 site is 'customary' land. Three possible categories of resident occur on any piece of clan land each with attenuated tenurial rights: agnates, or members of the primary landowning clan; cognates, those related through a female ancestor; and those not related

³ OSL Corporate History of Hides. George Clapp 2002. OSL archive.

⁴ These ref numbers refer to maps and the master clan list provided in the PD1 and PRL12 SMLI studies.

by descent, who are invited to occupy land or are given permission to do so⁵. Land rights are further complicated as the same person may have different statuses in different areas.

4.2 Demographics and Household Profile of Directly Affected Population

The Census and Survey Team estimates that the QA1 site has 22 affected households, of which 14 will require physical relocation, and eight of which will experience economic displacement, thereby losing some of their gardens for which they will be compensated. Upon further review of economically displaced households, it has been recommended that four of these, who will lose substantial garden areas to the development, should also be considered eligible for physical displacement packages. The remaining four remain classified as economically displaced, eligible only for garden compensation. Figure 4-1 shows the location of impacted houses and gardens in the proposed Quarry site.

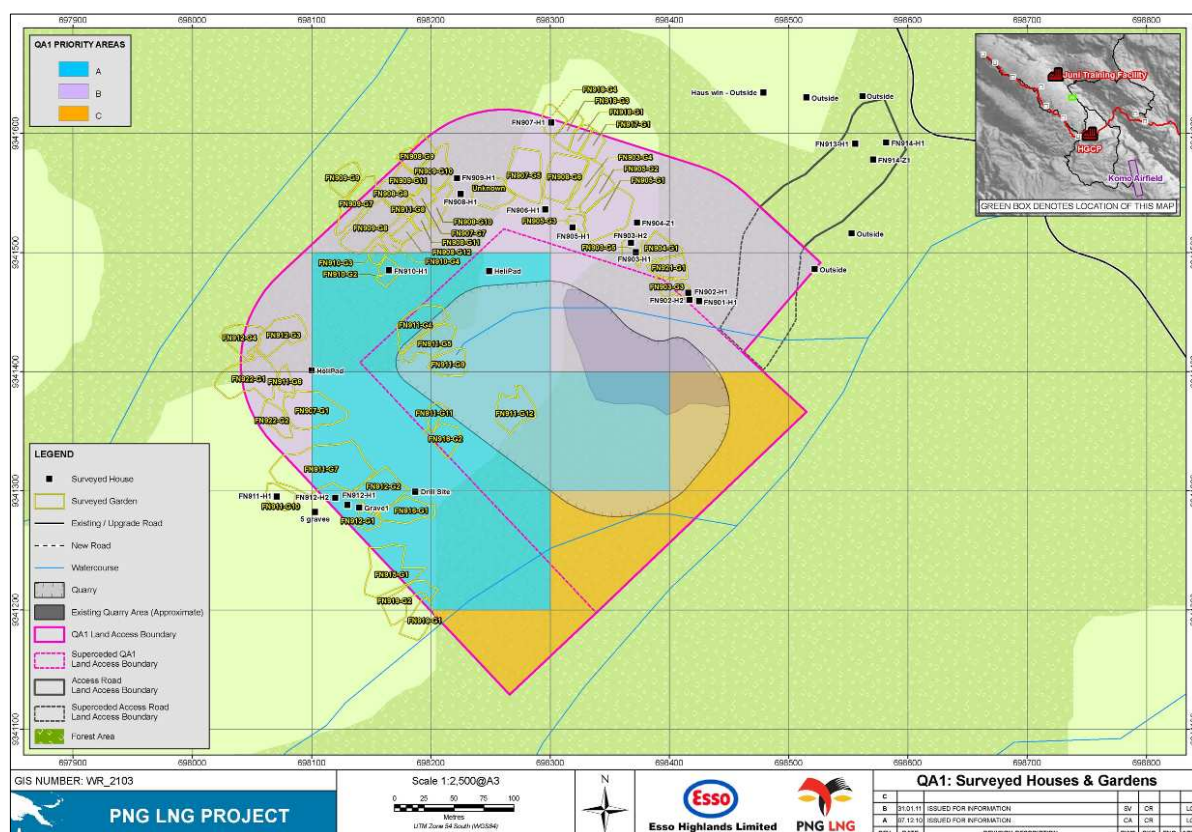


Figure 4-1: Overview of Affected Households (Houses & Gardens) at QA1

A total of 144 household members were listed in the social survey form. Approximately 38% of household members were absent at the time of these surveys. There are potentially 98 physically impacted persons who require relocation. There are 17 bush-material structures owned by the impacted families.

Of the 144 household members, 48% were male and 52% were female. The age breakdown of the people recorded is shown in Table 4-2.

⁵ Further details are provided in the HGCP RAP, Section 4.1.2.

Table 4-2: Age Breakdown of QA1 Household Residents

Age Range	Total	% of Total
0-5	17	12
6-14	26	18
15-19	13	9
20-55	82	57
56+	4	4
Total	144	100

The average family size of 6.5 persons per household is in line with levels broadly known for the Huli area. Fifty-one percent of QA1 respondents had never married, which again seems consistent with results obtained for HHR (59%), HGCP (56%), Komo Airstrip (60%) and the more general Hides catchment (55%) noted in the EIS SIA (2009).

4.3 Economic Profile and Livelihoods

The following sections provide short discussion of the status of livelihoods in the region. The importance of these considerations and the regional catchment comparisons is that they help highlight social issues, which are not otherwise captured by direct feedback from landowners, are not revealed by ELC direct interviews or focus group discussions, or for which affected landowners remain unaware. For example, understanding that one area may have lower literacy, lower school attendance rates or that income from sale of agricultural produce is higher than in other adjacent areas, can only be revealed by this kind of comparative and metric exercise. Succinctly stated, these analyses go to the crux of understanding 'issues' within the QA1 resettlement affected region.

4.3.1 Economic Conditions and Activities/Livelihoods

Income across the province is generally very low with the exception of those landowners who receive royalty and equity benefits. In 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). Findings discussed in Section 4.4 of the HGCP RAP (2010) indicate that in the intervening period between 2001 and 2010, some specific areas within these districts have enjoyed increased standards of living.

Agriculture provides the main source of cash income through sales of coffee, fresh market food, and firewood. It is however important to recognize that even this source of cash income is predominantly derived from selling occasional surpluses from what are predominantly subsistence food cultivation. 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 have been 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.

4.3.2 Income and Employment Activity

The QA1 social census recorded 89% of people were unemployed, which is consistent with the HHR rate of 92%. It should be noted that, in the context of a society largely dependent

on subsistence agriculture, the majority of these people are in fact engaged in productive activities, although these do not include paid employment. Only 9% had full-time jobs and 2% had part-time employment. As is the case elsewhere in this region, 77% of the actual employment reflected male participation. The job profiles were mainly in security, labor and camp maintenance positions. Employers included OSL, the local landowner companies such as Gigira Development Corporation (GDC) and HGDC and various EPC contractor companies. Figure 4-2 indicates that across the resettlement-affected areas levels of employment appear to show little variation.

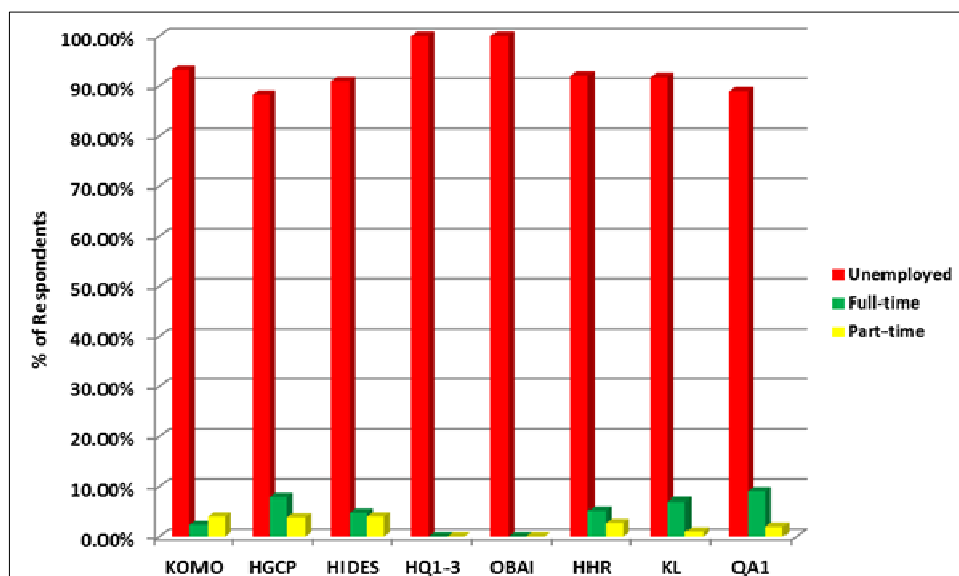


Figure 4-2: Comparative Employment Levels for QA1, Obai, HQ1-3, HGCP, HHR, KLF, Komo, and Hides Catchments

Figure 4-3 sets out the principal income sources for the QA1 residents and compares this with the results for other resettlement-impacted constituencies.

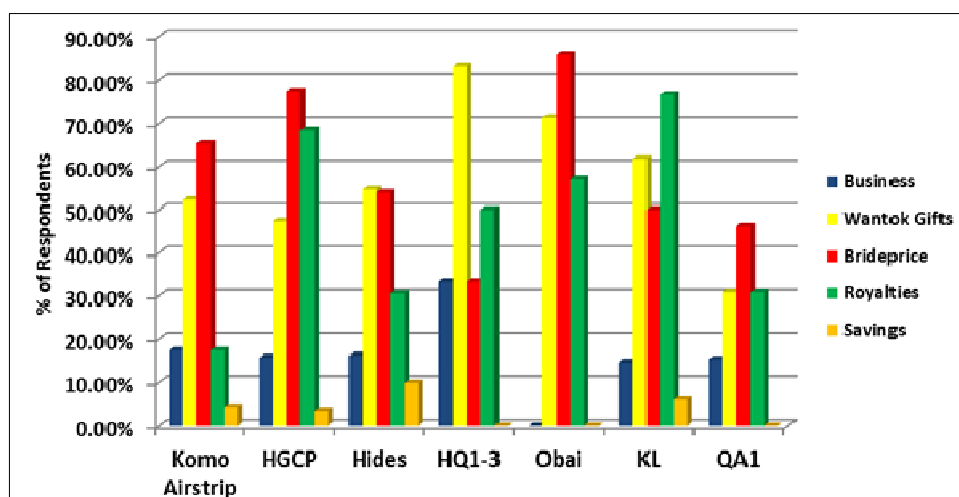


Figure 4-3: Income Sources for QA1, HGCP, HQ1-3, Obai, KLF, Komo Airstrip, and Hides Catchments

The QA1 profile in respect to business interests and bride price is similar to other affected Hides catchments.

Declared income from the sale of coffee (23%) – Komo Airstrip (83%), HGCP (91%), KAAR (93%) and HHR (89%) – was amongst the lowest recorded for the region and reflects the noted lack of coffee trees in QA1. Income from the sale of cash (46%) or food crops (55%) was high and above recorded findings from other resettlement-affected areas.

Table 4-3 depicts income sources across other resettlement-impacted areas. The QA1 profile is consistent with other area responses with the exception of a seemingly higher participation rate in cash cropping but lower incomes from *wantok* gifts. Along most other income parameters, QA1 residents do not deviate from the regional means in any statistically important ways.

Table 4-3: Respondent Income Sources for QA1, HGCP, HQ1-3, KLF, Komo Airstrip, KAAR, and HHR Catchments

Source	Resettlement Surveys						
% Household Income ⁶	KLF	HGCP	HQ1-3	Komo Airstrip	KAAR	HHR	QA1
Employment	24	9	07	22	13	18	15
Royalties	76	68	50	17	20	50	31
Business	15	16	33	17	33	17	15
Cash crops (only)	24	77	67	78	27	4	46
Livestock only	0	91	100	100	0	0	8
Fishing	0	9	17	0	0	8	0
Bride price	50	77	33	65	47	43	46
<i>Wantok</i> gifts	62	47	83	52	87	64	31
Savings	6	4	0	0	7	7	0

This kind of profile comparison indicates not only the continuity of findings for this area, but also the very few people who derive any income from saving regimes. This presents as a challenge to the Project - how to encourage investment amongst landowners who look for more immediate returns from cash-cropping and business enterprises.

Consistent with the general picture that emerges of a more traditional based economy, Figure 4-4 indicates that average family holdings of pigs and chickens is relatively good, with a declared fowl ownership double that of HQ1-3. Various other households reported having cassowaries and goats.

⁶ Note that, as more than one response was possible, percentages do not add up to 100%.

⁷ There was some discrepancy between the census which recorded nil employment, and the social survey which reported income from employment at 66%. We believe the census figure is the more accurate reflection of the status of employment in the area.

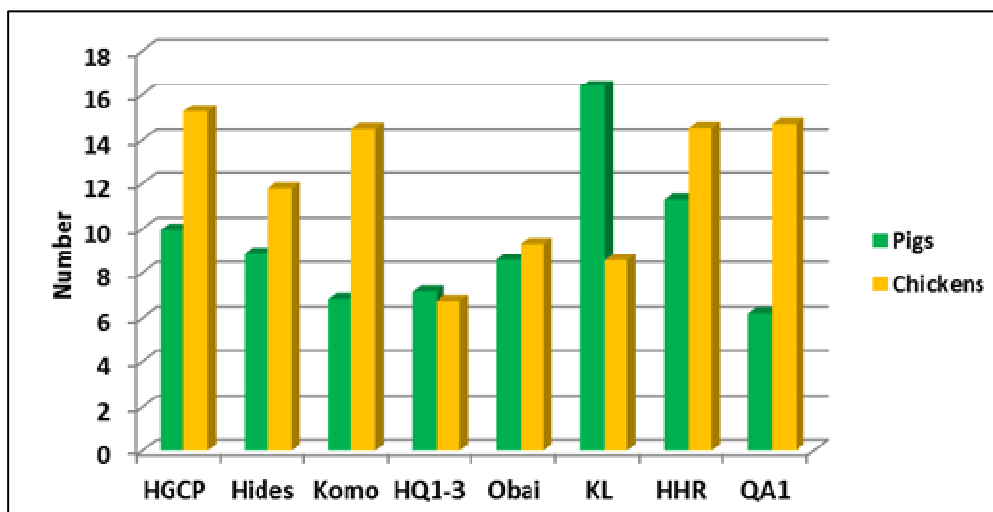


Figure 4-4: Average Pigs and Chickens per Household – QA1, Obai, HQ1-3, HGCP, HHR, Hides, and Komo Catchments

The declared average (mean) annual per capita income for the QA1 households which provided data is K1,235, notably lower than Kopeanda Landfill (KLF; K2,644) and KAAR (K2,034). The declared average (mean) annual income per household is K14,222, almost double the median annual household income of K7,139. Examining household income figures more closely shows that three households derive significantly higher income (>K20,000 per annum) than others from respectively formal employment at Tumbi, sale of fresh fruit at Nogoli, and business activities at Bebola. Removing these three outliers to obtain a more representative indication of average incomes brings the revised mean income (K8,930), significantly closer to the revised median (K6,640). The resettlement survey results indicate lower average incomes than those recorded in other surveyed areas.

4.3.3 Expenditure Activity

The resettlement survey reported an average (mean) declared annual household expenditure of K8,835 and median K5,070 for QA1 households. The mean annual per capita expenditure is K1,222. These levels are generally lower than in other resettlement-affected catchments, which is consistent with the lower income levels shown above.

As noted in previous RAPs, figures on income and expenditure reported in the socio-economic survey should be interpreted with some caution. Even taking potential inaccuracies in income and expenditure reporting into account, the figures reported indicate that the majority of households are not primarily engaged in a cash-based economy, relying largely on subsistence production. The monitoring program will obtain more accurate income and expenditure information over time.

The patterns of expenditure recorded (Figure 4-5) point to the continuity of traditional modes of social exchange through bride price, *wantok* gifts and funeral donations. The profiles of expenditure are similar to most other resettlement catchments though one notes a much diminished reported expenditure on *wantok* gifts (in line with lower reported incomes for this category as well) and school fees.

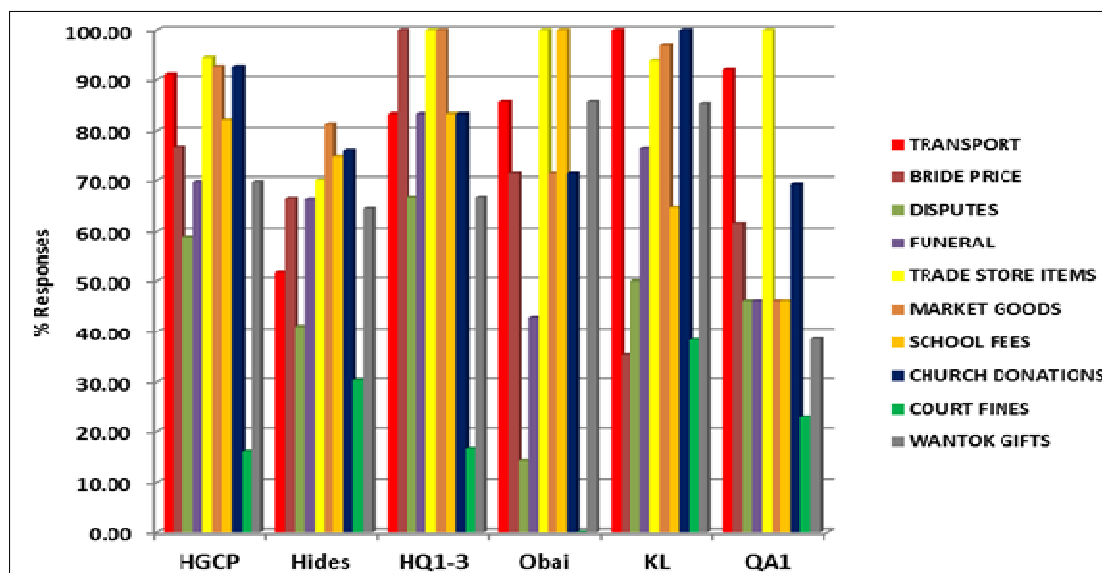


Figure 4-5: Expenditure Patterns of QA1, Obai, HQ1-3, KLF and HGCP Residents by Comparison with Komo Airstrip and Hides Catchment

Figure 4-6 illustrates the main purchases listed by QA1 households. Items purchased by 100% of households include rice and tinned fish, showing these to be primary sources of food purchased to supplement subsistence production. The high purchases of fresh meat (85%) and tinned meat (77%) reflect the shortage of protein in their production systems. All households purchased soap, as is common in the Hides area. Compared to items listed by Kopeanda households (landfill site), located some 2 km south of the QA1, a higher percentage (85% vs. 76% at Kopeanda) cited fresh meat as a regular expense, while significantly fewer purchased fresh vegetables (46% vs. 97% at Kopeanda). Other differences included significantly lower purchases of kerosene, fruit, garden tools and clothes (all under 50%, compared to over 70% at Kopeanda). Purchases of *buai* (betel nut) and tobacco were also significantly less than Kopeanda, at 46% compared to 71% for *buai* and 65% for tobacco respectively.

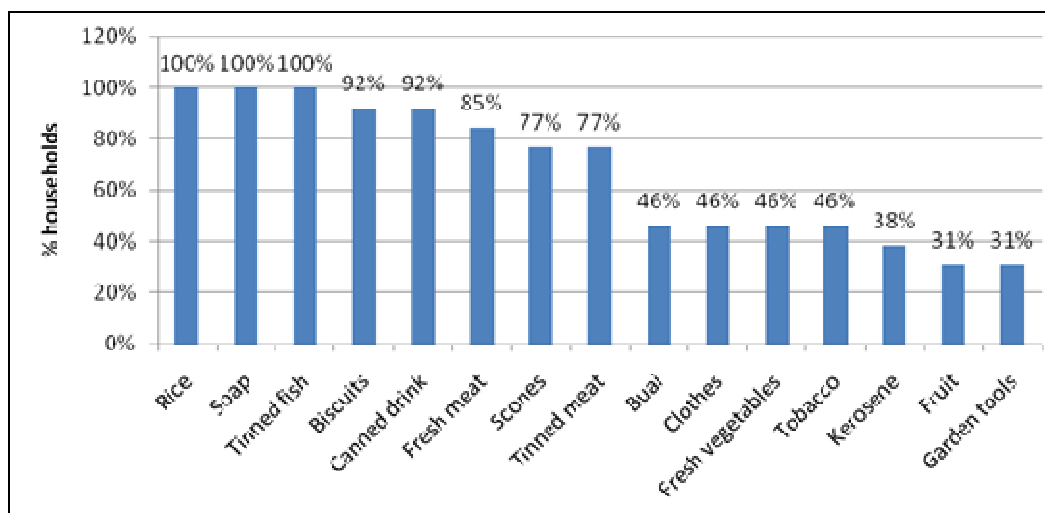


Figure 4-6: Main Items of Expenditure for QA1 Households

Travel profiles for QA1 households (Figure 4-7) broadly reflect the generalization that residents here represent a more 'rural' enclave. Only one respondent indicated they had travelled overseas and most QA1 residents had visited local urban hubs such as Tari.

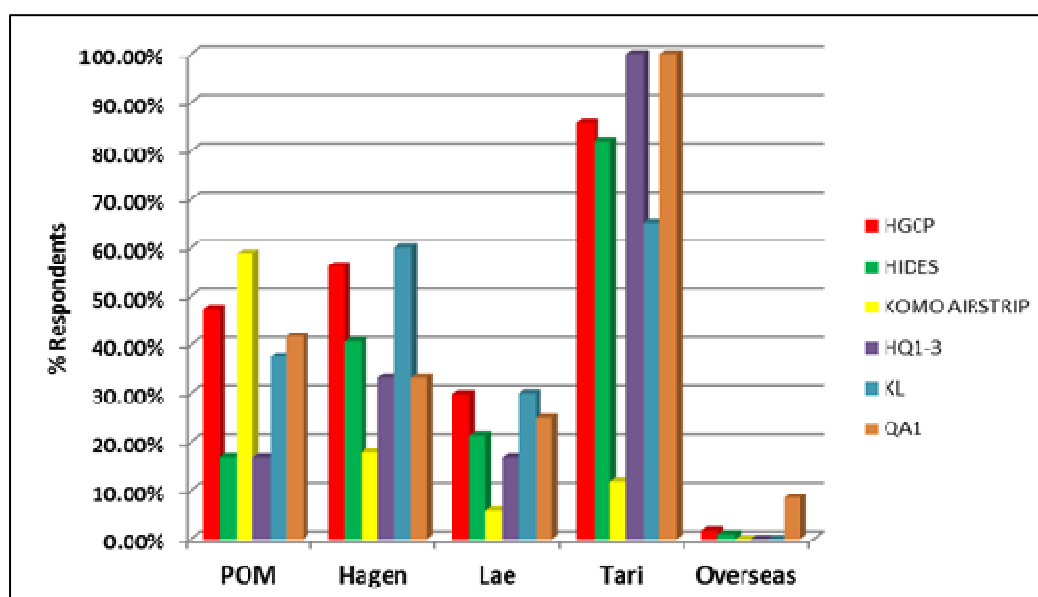


Figure 4-7: Travel Profiles for QA1, HQ1-3, KLF, HGCP, Komo Airstrip, and Hides Catchment

Figure 4-8 illustrates the household items declared by QA1 households. Noted again is the high level of mobile phone ownership (82%), kerosene lamps, cooking pots, and blankets. In QA1, there was one reported interest in a vehicle and two women had sewing machines.

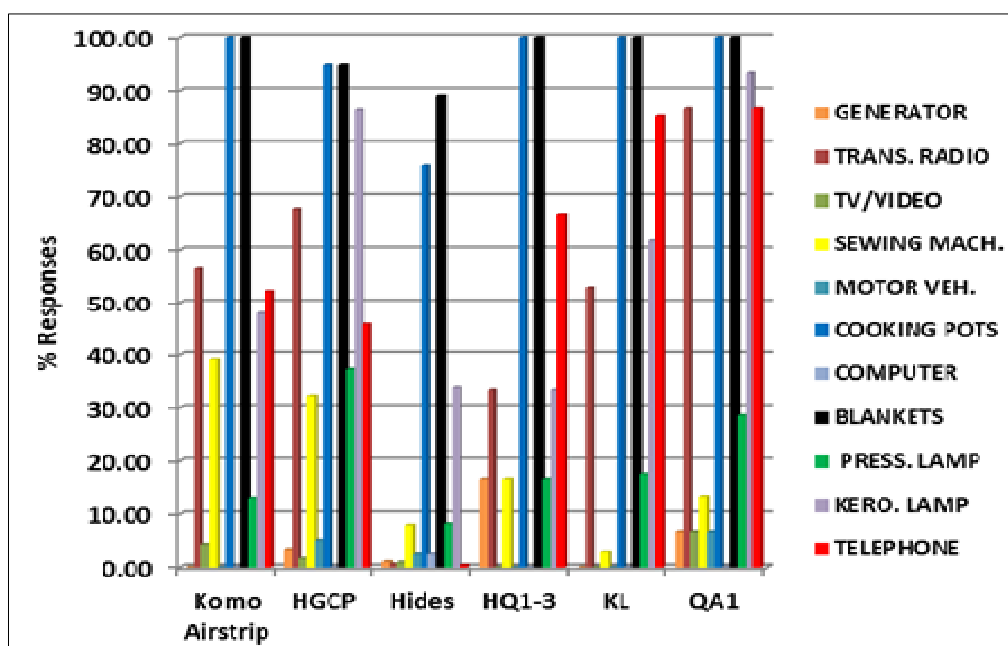


Figure 4-8: Comparative Household Assets QA1, HQ1-3, KLF, HGCP, Komo Airstrip, and Hides Catchments

4.3.4 Business Activity

Levels of business activity were lower than elsewhere. One woman reported selling some trade store items from her house. Some respondents reported sale of agricultural goods, comprised of occasional surplus production from their gardens. A fuel depot in the area that was built and maintained by one of the impacted households formerly supplied fuel to HGDC, but was no longer doing so by the time of the survey, and was due for demolition at the time of the census and survey in which it was recorded as one of the household's structures.

4.4 Education Profile

4.4.1 School Attendance

The QA1 social survey indicates that 50% of school-age children were attending school, which is broadly consistent with levels reported for HGCP (49%) and KAAR (62%), and a higher participation rate than for the Komo area (30%) or Komo Airstrip (22%). There was a marked difference between male and female participation rates: only 25% of females attended compared with 67% of males.

For explanations of non-attendance, the families of school children indicated that the problems were security (50%) and lack of school fees (50%). Notwithstanding these responses and demands by landowners for the Project to assist with school fees, it is unclear that having fees paid will, in the short-term, address non-attendance and issues with school service capacity.

4.4.2 Educational Attainment

The majority (67%) of respondents (15+) indicated they had received no education at all—KLF (46%), HHR (44%), HGCP (43%), HQ1-3 (47%), Obai (80%), Hides catchment (53%)—which is higher than most other impacted Hides catchments. Consistent with the gender-nuanced imbalance of school attendance and attainment, 59% of males reported no formal education compared with 73% of females. Only 1% of QA1 residents claimed they had achieved Grade 10 or higher, a figure well below the wider Hides area but consistent with the Komo catchment. QA1 school attainment results are lower than for adjacent areas such as the HGCP. Attainment of higher education qualifications in the Project Impacted Area (PIA) is predictably low, but in QA1, there were two individuals who had been to university and one other with a trade certificate.

4.4.3 Literacy

A comparison of illiteracy rates for those aged 10 years and older across some selected PIA communities⁸ indicate that Huli communities have comparably higher rates of illiteracy than in either the Gobe or Kikori region communities. Comparison of the above findings with the results of the QA1 social survey indicates the accuracy of previous baseline data. The illiteracy rate for 15+ years was 60%, compared with Komo Airstrip (45%), KLF (55%) and Hides catchment (60%). As for everywhere in PNG female illiteracy rates (QA1, 67%) are always higher than for males (52%) and this is again illustrated in

Figure 4-9 where the QA1 profile is closest to that recorded for both KLF and HQ1-3 areas.

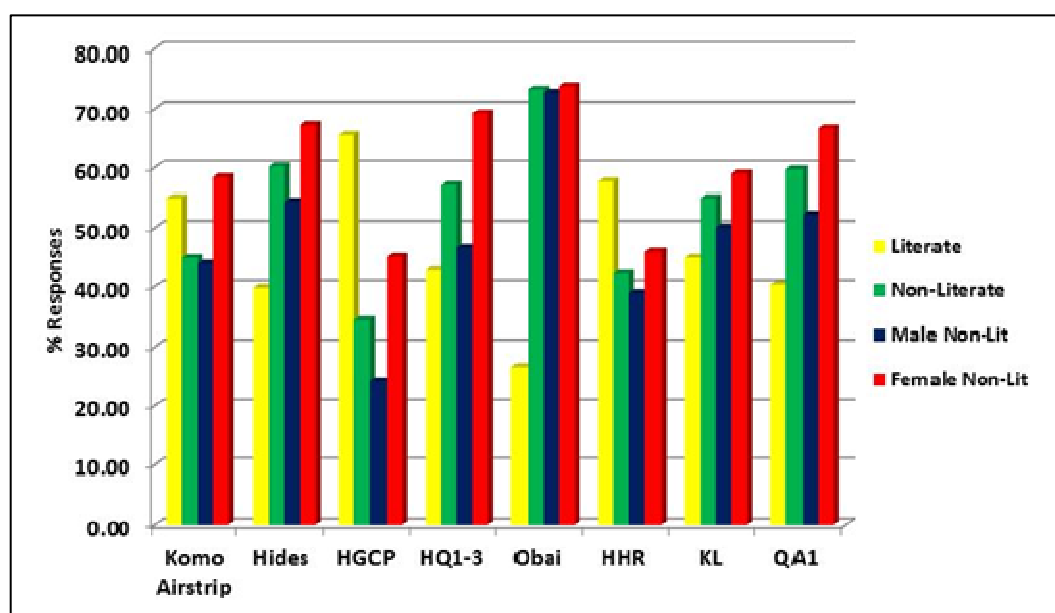


Figure 4-9: Literacy: Illiteracy and Male/Female Illiteracy Rates Across Hides and Komo Resettlement-impacted Areas

⁸ These data are contained in HQ1-3 RAP

4.5.2 Water and Sanitation

All (100%) of QA1 survey respondents indicated that they sourced their water either from springs or from rivers. There were no household or communal water tanks. Average time to collect and return with water was 21 minutes (with a range from 5 to 60 minutes), which compares favorably with the KLF findings. Eighty percent of those who responded to the enquiry reported that water is available all year round. Impacted households currently get most of their water supply from a source at the base of the proposed quarry site. The compensation package allows all resettled households to erect rain storage tanks, and water collection '*haus wins*' will be erected for the indirectly affected community through a consultative process.

Table 4-4 indicates that reliance on customary modes of ablution is particularly high in the QA1 environs, as it elsewhere in the region, and consistent with that found in most other resettlement-affected catchments.

Table 4-4: Traditional Pit Latrine and Bush Usage at HQ1–3, KLF, QA1, HGCP, Komo Airstrip, and HHR Catchments

	Komo Catchment	QA1	Komo Airstrip	HGCP	HQ1–3	KLF	HHR
Bush	14%	20%	9%	5%	67%	28%	11%
Traditional Pit Latrine	74%	80%	91%	91%	33%	72%	86%

4.5.3 Sources of Energy

All (100%) of the QA1 households rely on firewood for fuel, which is much the same proportion as found for the rest of the Huli rural population. The significantly lower reported purchase of kerosene at QA1 compared to Kopeanda (Section 4.3.3) shows greater reliance purely on wood, as a resource that can be locally gathered, compared to what must be purchased from outside. This is consistent with generally lower income and expenditure figures reported, emphasizing even less participation in the cash economy than other surveyed areas.

4.5.4 Communications

As noted above, the resettlement survey found that 87% of respondents reported they had mobile phones, which was comparable with levels reported for KLF (85%) and KAAR (93%). The only other access to telecommunications is that available at the Nogoli camp.

4.6 Structures

4.6.1 Types of House: Materials Used and Sizes

All the 17 impacted physical structures were constructed of bush-materials, usually woven cane or split timber slabs with a *kunai* (*imperata* grass) thatch roof.

Figure 4-11 illustrates the location of affected houses within and around the QA1 site.

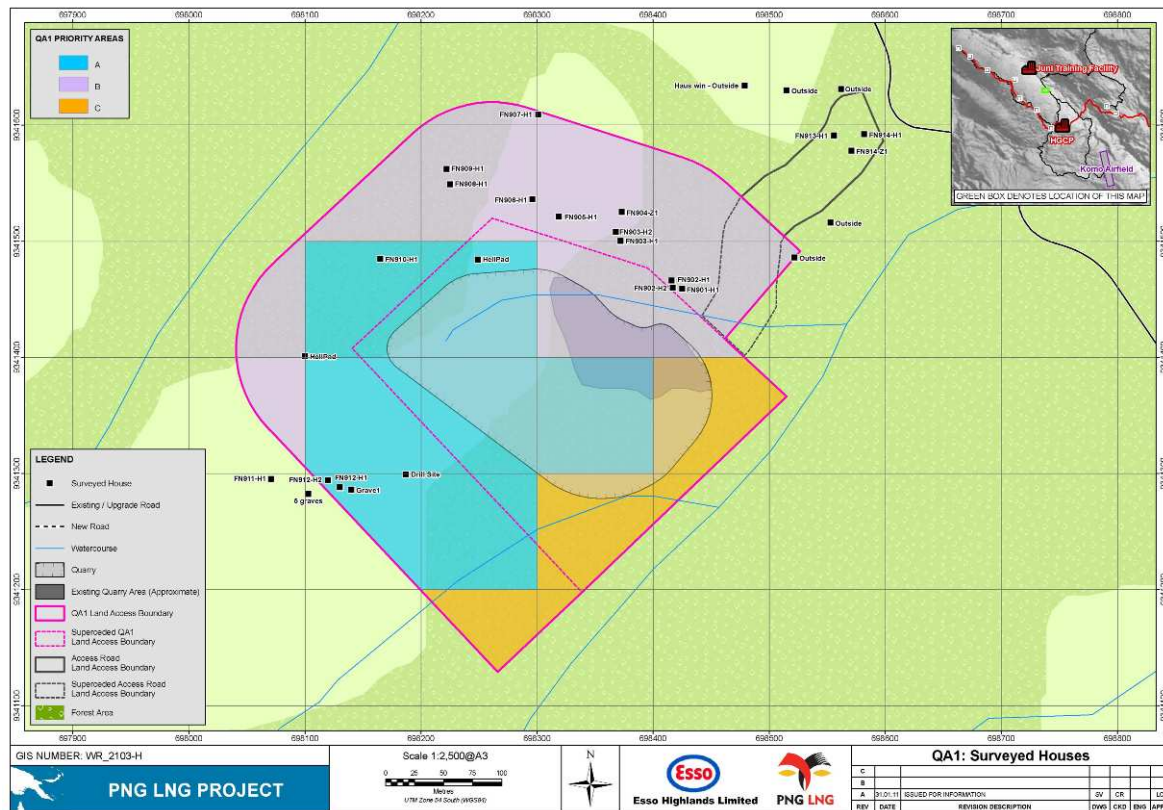


Figure 4-11: Affected Houses in QA1

4.7 Land Tenure and Land Use

4.7.1 Garden Census

A total of 50 gardens were found to be located within the QA1 site, belonging to 22 households. The physically impacted households owned 37 gardens. These include predominantly sweet potato gardens interspersed with other crops, as well as what is referred to as house gardens and mixed gardens in which a variety of vegetables and crops other than sweet potato is grown. Additionally, four households were found to have coffee gardens, although only one was noteworthy of measuring. The remainder was comprised of recent seedlings that could be considered speculative planting, for which households will receive limited compensation. The total area of affected (sweet potato) gardens is 2.9 ha. The average garden area per family is 0.17 ha (median 0.13 ha); the largest garden area was 0.64 ha.

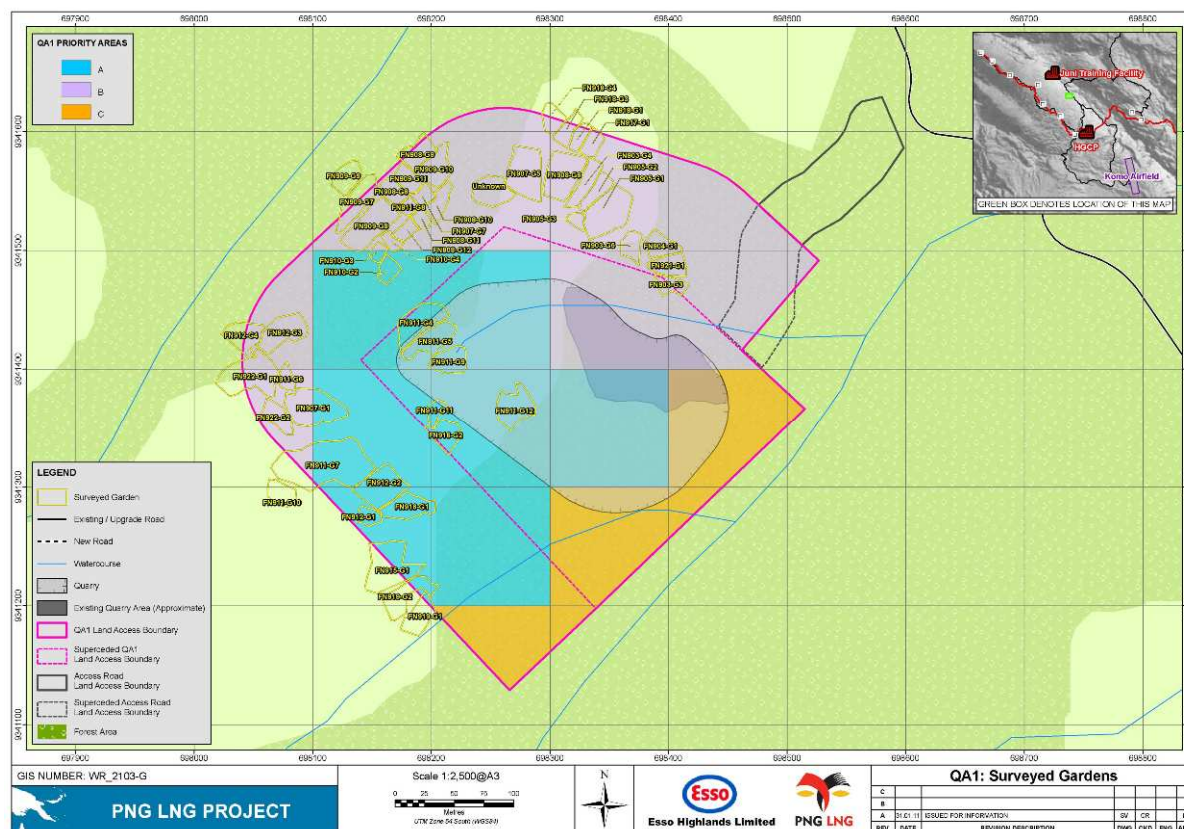


Figure 4-12: Affected Gardens in QA1

4.7.2 Field Crops, Trees and Economic Trees

The agricultural survey counted 9,316 coffee trees (6,657 seedlings and 2,479 trees in moderate condition). Economic trees included 31 pandanus, 138 casuarinas, 16 castanopsis, 1 black palm and 472 bamboo clusters. Furthermore, 1,352 food-producing trees (including fig, breadfruit, tomato, avocado, guava, karuka, mandarin, manu leaf, orange and pawpaw) were also counted in the survey, and will be compensated. There are no significant differences in agricultural practices between QA1, KLF, HHR, Obai, HQ1–3, Komo and HGCP.

A large number of useful trees are planted around gardens and when gardens are fallowed, these trees make up an important component of the fallow vegetation. By far the most important economic tree is Casuarina (*pauwa*). Castanopsis (*pa*), a timber tree that also produces edible nuts, is the next most important economic tree. Most families also own one or two pine trees and limbum palms.

4.7.3 Livestock

While average livestock per household levels have shown similar spikes over the regional mean for most of the resettlement-impacted catchments, pig and chicken livestock ownership for QA1 residents was at similar levels to Komo Catchment families.

4.7.4 Use of Natural Resources

Landowners will receive compensation for damage to, and loss of, forest resources according to the IPCA.

4.8 Cultural Heritage Sites

A cultural heritage survey was undertaken between May 3 - 5, 2010 as part of the pre-construction survey undertaken to evaluate ground for development at Quarry QA1.

Nine cultural heritage sites were found within the Quarry QA1 worksite. These include:

- Two ceremonial sites, consisting of one warrior meeting site (QA1-01a) and one warrior celebration site (QA1-01b);
- Two bachelor cult sites (QA1-02, 08);
- One sacred site consisting of an initiation cave/shelter (QA1-03);
- One economic site consisting of a possum trap site (QA1-04);
- One ceremonial site consisting of one grave/burial site (QA1-05-B); and
- Two sacred sites, consisting of: one death spirit site (QA1-06) and one cleansing site (QA1-07).

Figure 4-13 illustrates the distribution of these sites in the QA1 catchment.

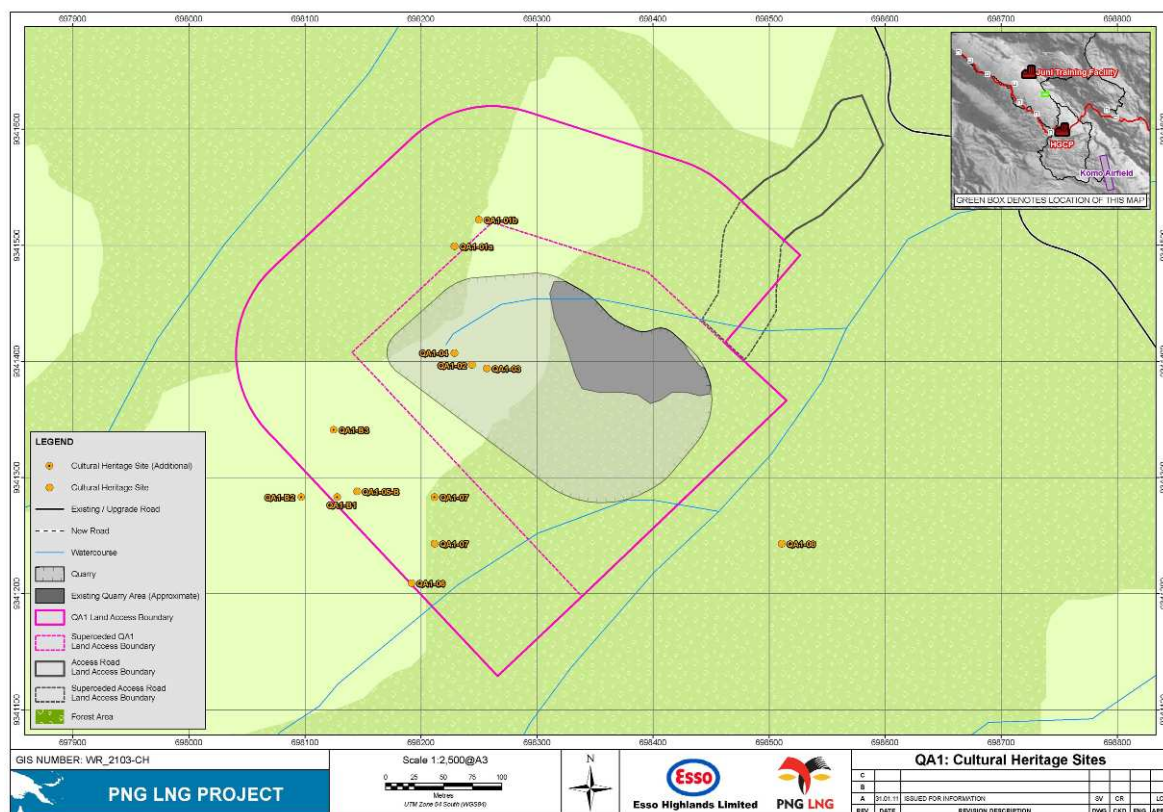


Figure 4-13: Distribution of QA1 Cultural Sites

The Project's cultural heritage programs and protocols were developed to deal with both archaeological evidence and secondary burials and to ensure that, where appropriate, relocation of ritual items occurs in accordance with Huli custom. The Project's preferred management approach for known cultural heritage sites is avoidance. For those sites that

cannot be avoided, appropriate management measures may include sample salvage-excavation and/or salvage through surface collections.

Specific mitigation measures for the sites identified at QA1 include heritage damage compensation to be paid for the ceremonial and sacred sites, and relocation of burial sites.

4.9 Vulnerable Households

The Project will assist all elderly, young, landless, infirm, and disabled people affected by involuntary resettlement to ensure that their needs are appropriately met during the physical relocation and re-establishment of houses and gardens. There are six individuals over 56 years old, no persons with disabilities, and one individual who is an asthmatic. It was also established during the consultation process that an above average number of households in the area are effectively headed by single women. Although male household heads were recorded in the survey, many of these are frequently away, or have abandoned their families. Access to land for some of these households, for residences and gardening, may be more difficult so access will be monitored closely.

ELC is currently compiling a list of vulnerable households and individuals across all resettlement sites, which will be used for ongoing monitoring of these households' progress during and post-resettlement. In the case of QA1, the following will be monitored:

- Five households that have a number of members older than 60 years;
- Two female-headed households that may experience limitations accessing adequate land (although they have identified alternative sites); and
- Four households where the wives have expressed concern that their husbands may take all the cash compensation funds and abandon them.

4.10 Resettlement Sites

At the time of writing, consultation and negotiations with affected households are underway, and 50% of the households have identified potential resettlement sites (Figure 4-14).

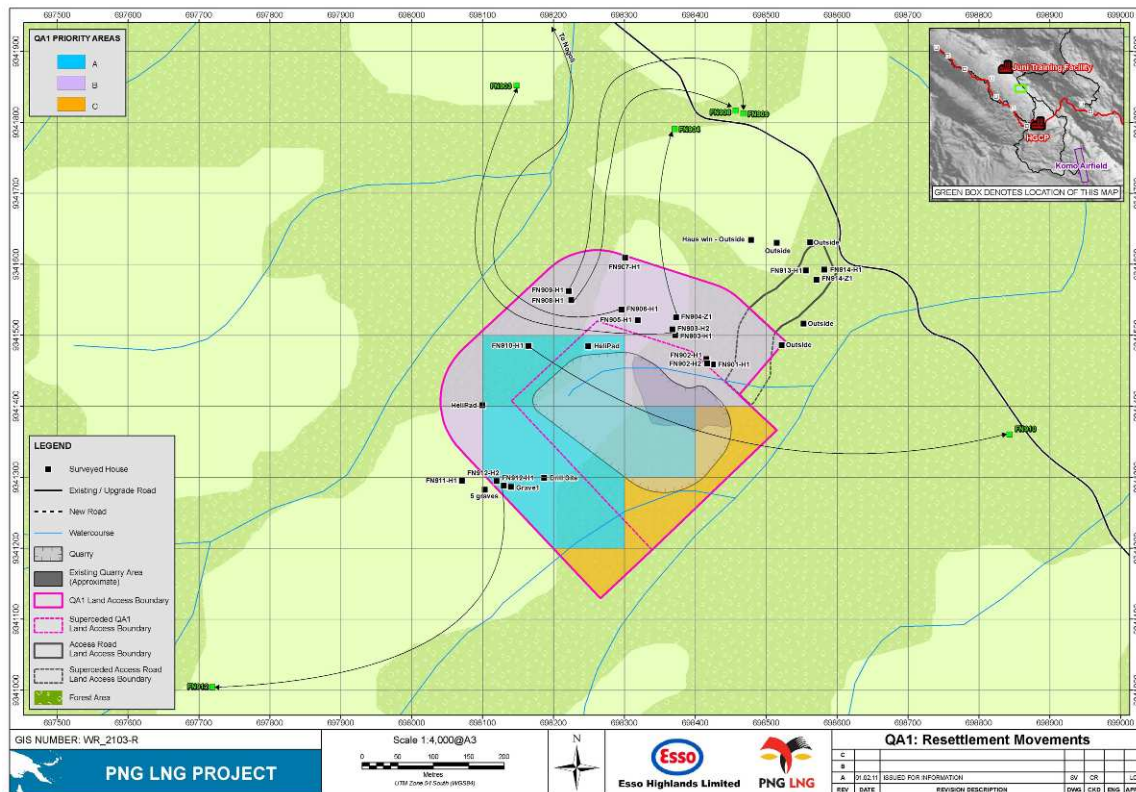


Figure 4-14: Location of Resettlement Sites Identified by QA1 Households

Resettled individuals have all selected sites in close proximity to the road leading from Nogoli to Hides (Figure 4-15), which can be expected to ease their access to infrastructure around the main centers of activity in the area. One household has identified a site near the Nogoli camp. Only one of the sites identified is located a significant distance further from the road, towards the southwest of the quarry site.

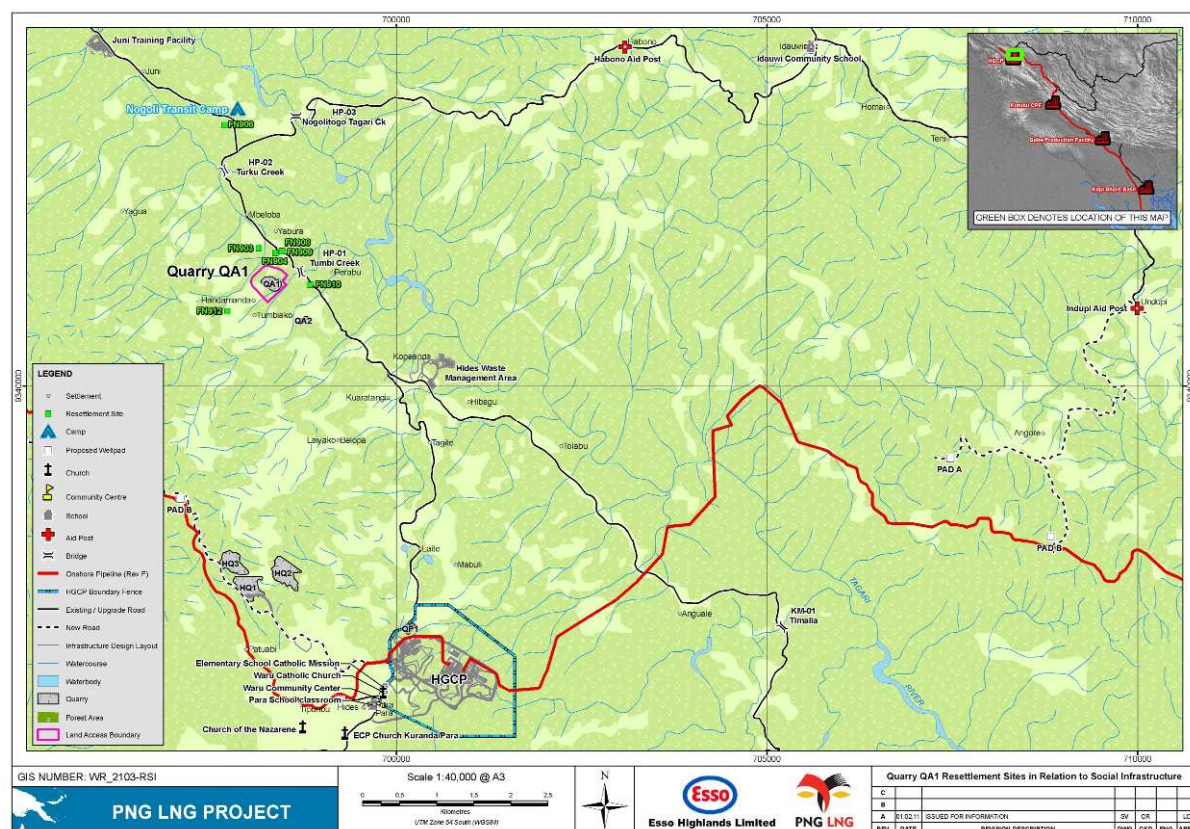


Figure 4-15: Location of Resettlement Sites in Relation to Social Infrastructure

Most households had identified replacement sites at the time of writing and all others are expected to identify sites. This likelihood was also reflected in the initial socio-economic survey in answer to the Question I10, “*What is your relationship to this [relocation] land?*”. Half of the respondents who provided answers at the time of the survey said they would move to their father’s land, 30% to their husband’s land, 10% to their wife’s land and 10% to their stepmother’s land.

In response to Question I11, “*How far is it [relocation land] from your current house?*”, 22% percent of respondents declared the travel time to the new relocation site was no more than one hour; 67% estimated a travelling distance of between one and four hours; and only one respondent (11%) indicated the relocation distance was more than four hours. It is worth noting that none of the sites that have been identified by the time of writing are more than 3 km from the QA1 site. As indicated above, these sites are situated on land already owned by the resident QA1 clans. Resettled individuals identified Tumbiagio and Handamanda as two preferred locales on the hills surrounding the quarry. Most relocated individuals will retain the same tenurial rights on their relocated land as presently enjoyed.

With respect to Question I12, “*What do you own there?*”, 25% of respondents said they had both a house and garden, while 75% said they had a garden only. The accuracy of these claims will be investigated during the implementation phase.

4.11 Project Knowledge and Attitude to Relocation

The resettlement family/house social survey recorded comments from QA1 affected resettlement landowners in response to Question I4, “*Are there any aspects of this Resettlement Action Plan that you do not agree with.*” The majority (>50%) of responses expressed uncertainty as to how the eventual package and negotiations would be received by the community. Subsequent to the survey being undertaken, resettlement packages have been negotiated with all households and the process supported by the ELC.

In response to the Question I5, “*Are you willing to self-relocate?*”, the majority (55%) of the QA1 landowners were willing to relocate, and the remainder were unsure. The fact that none of the potentially impacted resettled individuals answered “No” was encouraging.

In response to the Question I7, “*Do you think your life will be better after the relocation?*” 27% were “unsure”, 9% answered “yes”, and 64% responded “no”. This level of pessimism is unprecedented amongst resettlement-affected locales and appears somewhat inconsistent with the willingness to relocate. This initial response may have been intended to project a hardened negotiation stance with respect to many of the community issues described in the text below.

In answer to Question I8, “*Do you think there will be any benefits from the relocation?*”, most affected landowners understood the considerable cash stream benefits and job opportunities, and also looked forward to the housing package and rations provisions (Figure 4-16). There was no expressed expectation that provision of social services would be enhanced.

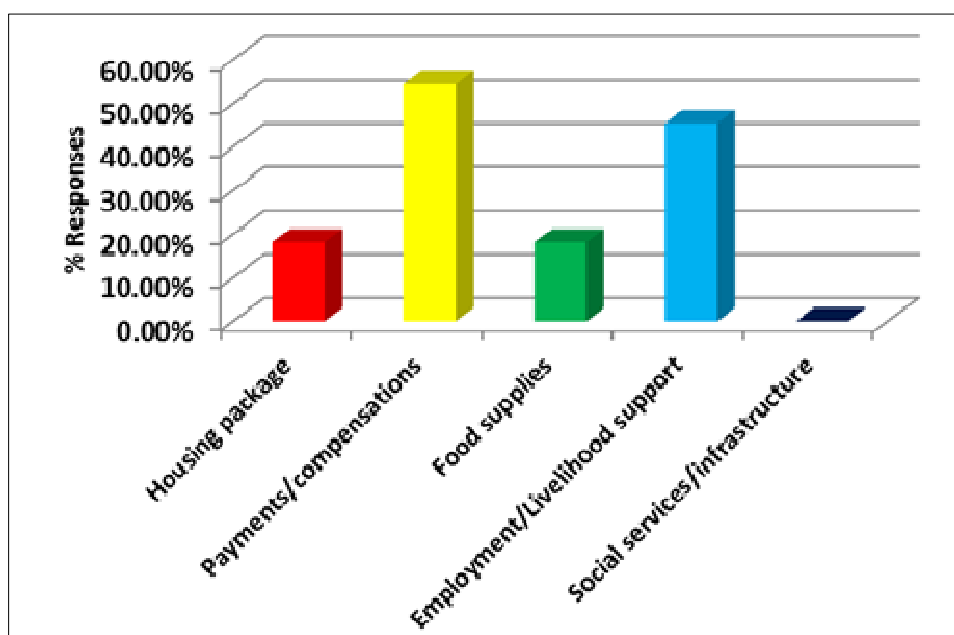


Figure 4-16: Perceived Benefits of Relocation

Other issues raised by the QA1 affected landowners were captured in the open survey Question I13, “*Is there anything else you would like to say?*” There were few differences in these responses from those captured from other resettlement areas – they included, but were not limited to, concerns about replacement house building, the quantum of compensation, provision of adequate water, and assistance for elderly people.

The findings discussed above do not present as atypical in the general context of resettlement in the Hides-Komo region. In the initial phase of disclosure—when these concerns were recorded—landowners voice all of their anxieties, which over the course of the following months, become attenuated as they learn more about the resettlement process and both strategies and prioritize their demands.

5.0 CONSULTATION AND DISCLOSURE FOR THE QA1 RAP

5.1 Overview of Consultation and Disclosure

This section outlines the consultation and disclosure activities undertaken for the preparation of the QA1 RAP. The Resettlement team conducted initial consultations in November and December 2010 (Figure 5-1).



Figure 5-1: Resettlement Public Disclosure Presentation on 13/12/2010

In addition to consultation activities undertaken by the Resettlement Implementation Team (RIT), the Environmental Law Centre (ELC) was also involved in such activities. ELC accompanies the RIT members during group and household consultation sessions in order to provide legal advice to households and to the Resettlement team. Numerous interactions have been held and are ongoing with QA1 households (Table 5-1).

Table 5-1: Summary of QA1 Consultation Interactions for Affected Households and Communities

Consultation Type	Date	Number of Meetings	Number of Attendees per Meeting
Public Disclosure Events	13th December 2010	1	86
Resettlement Implementation Team	12-24 December 2010	8	Range 8-50
ELC Consultations	2-24 December 2010	8	Range 1-30

5.2 How Stakeholders Were Identified for the QA1 RAP

Stakeholders were identified during the Disclosure Meeting, through the resettlement surveys, and through the establishment of the QA1 Committee that consists of eight representatives.

5.3 Consultation and Disclosure Methods Used and Planned For

Verbal information (during community meetings and household meetings) on the proposed QA1 development was supported by various materials provided, as appropriate to the stage of the process. Information provided for this and other resettlement areas is described in more detail in the HGCP and subsequent RAPs (Section 5.3).

5.4 Role of the Local Advocate

The ELC plays a monitoring and review role as an impartial observer. Actions include attendance at both public meetings and individual household negotiations. Feedback and clarification were given to the household members on issues where there was evident confusion about the role of the PNG government and the Project's resettlement process.

5.5 How Stakeholders' Issues and Concerns were Elicited

During the land use, assets 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.

5.6 Consultation and Disclosure Events

A key method for consultation and disclosure during the QA1 RAP was a series of resettlement consultation and disclosure community meetings. These are briefly summarized below.

5.6.1 Awareness of the Proposed QA1 Development

Immediately after the first community and consultation meeting, the QA1 households were consulted to establish their awareness and understanding of the resettlement process. Survey results to assess feedback are summarized in Table 5-2, which shows that continuous public engagement and disclosure is required.

Table 5-2: Awareness of the QA1 RAP Consultation Process

Q #	Question Posed	Yes	No	Unsure
11	Did you attend the road-show presentations of the RAP?	82%	12%	-
12	Do you think you understand the Resettlement Action Plan?	64%	18%	18%
13	Would you like the Project to explain the Resettlement Action Plan to you again?	55%	36%	9%

The public consultation sessions were well attended and understood, and demonstrated a demand by the community for both repetition and further public engagement concerning the resettlement process.

In response to the open ended Question 16, “*What problems do you think relocation will present to you and your family?*”, many people gave multiple answers expressing the following concerns: a projected shortage of food, problems of building another house in a short time-frame, shortage of water and lack of alternative land for relocation (Figure 5-2). The accumulated knowledge gained from resettlement in this region is that affected households’ attitude to relocation improves significantly between the initial survey, when the problems noted above were raised, and future consultations.

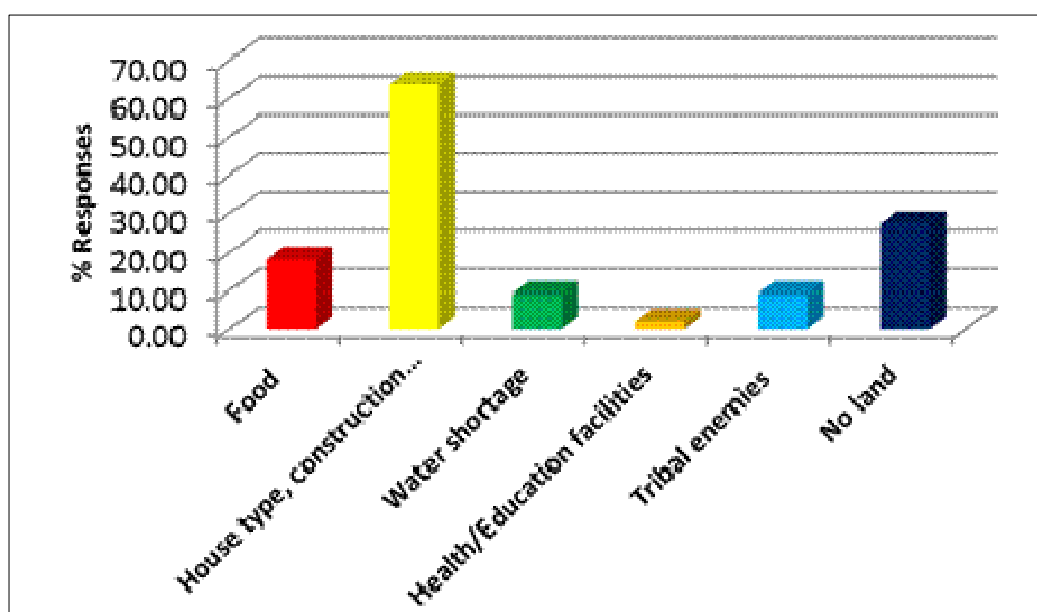


Figure 5-2: Anticipated Family Problems Resulting from Resettlement

5.6.2 RIT Consultation

The RIT conducted a public engagement and disclosure program in December 2010 and January 2011. Issues raised concerning private negotiations, parity of resettlement packages, sacred site compensation, and female participation were common to most question and answer sessions in the region.

5.6.3 QA1 Committee Meetings

Since the 14 December, three meetings have been held with the QA1 Resettlement Committee, which was established to liaise with the RIT regarding matters pertaining to resettlement.

5.6.4 Consultation with Vulnerable Households

Following receipt of information that a significant number of female-headed households may be vulnerable, the RIT, with ELC, conducted an investigation into the situation by interviewing women from households with both houses and gardens within the QA1 area.

5.6.5 Consultations by ELC

The ELC's involvement in the public engagement process was multi-tasked, and involved providing guidance in the drafting of agreements, maintaining a record of issues and grievances to be resolved, and advising impacted households of their rights in terms of the O&GA and other relevant PNG legislation. They have also provided feedback to the community, further explaining the process of physical resettlement, livelihood restoration programs and investment funds.

5.7 Summary of Issues Raised During Consultation

The community is looking to the Project to provide community development and employment opportunities, as was the case with all other Project sites. Table 5-3 provides a summary of the main resettlement issues raised during the consultation process and relevant responses.

Table 5-3: Summary of Resettlement Issues Identified

Issue	Response
Concern was raised about the quarry contract ⁹ and disputed rates offered for limestone/gravel.	The rate of K1.80/m ² for aggregate sourced from the quarry is stipulated in the IPCA. The Contractor has agreed to pay an additional bonus should there be no work stoppages.
Many requests were made to provide spin-off business opportunities through Contractors and the local Lanco.	This issue has been referred to the Contractor, and will be dealt with as part of the Project's National Content development plan.
The QA1 community wants all their agreed monies paid in cash, and most especially no Interest Bearing Deposits (IBD) for the elderly.	The agreement for QA1 contains cash payments for various milestones reached. The IBD component used in previous areas is no longer compulsory, but has been replaced by a deferred payment component.
Concerns were raised that resettlement sites are located further from the river, which is their current primary water source. The quarry fence will also cut off affected households' current access to water sources located within the proposed quarry site.	Access to water will be closely monitored. As in other resettlement areas, collaborative community planning initiatives will be undertaken to identify suitable alternative sites for water tanks. A portion of the compensation package is allocated for the provision of water tanks for rainwater collection at replacement homes.
Women consulted expressed fear that men will take all the compensation money to be paid by the Project, leaving women without the land on which they currently depend, and with no alternative income/subsistence sources.	Vulnerable women will be monitored closely post-resettlement to ensure their wellbeing. Special care will be taken as part of the livelihood restoration program to address the needs of affected women.
Women expressed concern about losing their current gardens, noting this to be their primary source of subsistence.	The women were advised that rations are provided to cover the period between moving and new gardens providing a harvest.

⁹ An IPCA for initial quarry material was signed on 20th July 2009.

Issue	Response
A feeder road/track needs to be built by the Project because the fencing around the quarries will cut off access uphill to resettled areas and down to water source, main road, and schools.	The need for access routes around the proposed development site is recognized, and will be addressed as part of collaborative community planning initiatives similar to what has been undertaken at Komo and HGCP. A footpath will be constructed around the northern portion of the site to provide alternative access around the site. The access track will be completed before site access is restricted.
Many of the women consulted want to invest the money and asked RIT to provide business advice on banks and other business opportunities.	The <i>"Olsem Wanem na bai mi yusim moni bilong mi?"</i> brochure was distributed in response to the many questions about how to use and invest money. The Compensation and Business Advice Team will also be providing awareness on the purpose of compensation payments and advice, and where possible, on business opportunities.
A number of questions were raised concerning Project assistance in building/renovating schools and churches as well as a health post in the areas where they move to.	The role of the government compared to Project was explained. Participative community planning will be conducted to identify potential improvements to community infrastructure.
Community wants livelihood restoration programs.	Livelihood restoration programs will be provided for a period of two years post-resettlement.

6.0 PROJECT IMPACTS

6.1 Introduction

The construction of the QA1 will mean that people, who currently reside within the locale, or use land and resources within this area, will no longer be able to do so and/or will have to relocate. Table 6-1 presents a summary of the potential impacts and mitigation measures.

Table 6-1: Summary of Impacts and Mitigation Measures

Impact	Scale	Mitigation – Project Responses
Residential structures affected	14 households to be physically displaced and 17 structures affected. A further four households qualify for physical displacement packages due to the extent of garden losses, while four additional households will be economically displaced (garden losses only)	Package reflects agreed cash and in-kind compensation provisions for affected landowners. Landowner acceptance evidenced and signaled by signed agreements with ELC.
Loss of access to natural resources (deprivation)	Approximately 15 ha site	The Company will pay the Landowning clans compensation as defined in the IPAs, in compliance with Section 118(2) of the Oil and Gas Act, at equivalent market rates. Three forms of payments will be made: Compensation for the use and enjoyment of the surface of the land (annual payment) Compensation for land surface damage (one-off payment), and Compensation for initial damage to naturally-occurring bush, vegetation, birds, animals or fish (one-off payment)
Loss of gardens, trees and other crops	2.9 ha under garden cultivation which includes 50 gardens. Trees: 9,316 coffee; 31 pandanus; 138 casuarina; 16 castanopsis; 1 black palm; 472 bamboo; 1,352 various crops and trees (fig, breadfruit, marita, tomato, and avocado); 1,128 crops (pineapple, ferns, pitpit etc)	Individual landowners are entitled to one-off damage compensation payments. Compensation at the equivalent of market rates will be paid for crop losses, and temporary rations are provided to assist with subsistence requirements until gardens are re-established. Households will assist with the verification of trees to ensure that full market rates are paid. A livelihood restoration program will be implemented to assist affected households with restoring or improving livelihoods.
Disruption in social networks	Limited disruption as the majority of affected households will be moving short distances away from the QA1 site.	Most households will self-relocate to areas in close proximity higher on the ridge of Tumbiago and Handamanda. Social networks with respect to exchange relations will continue as these are based on kinship, descent, affinity, and friendship ties, and not related, per se, to specific locales/areas.

Impact	Scale	Mitigation – Project Responses
Impacts on business and employment	No impact on business activities. No loss of employment anticipated.	Not applicable
Impact on water sources	The primary water source currently used by displaced households is at the base of the proposed quarry site and will thus be impacted. Alternative sources are further away and will require longer, uphill walks	Tumbi and Tumbiagio creeks are located within the quarry area. The creeks will be avoided and an access control zone of 10 m established around them. In addition, sediment control will be implemented. A portion of the compensation package is allocated to provision of water tanks for rainwater collection at replacement homes. As with other resettlement sites, consultative community-planning exercises will be conducted to identify potential sites where a <i>haus win</i> and water tanks, similar to those provided at HGCP, will be constructed to mitigate impacts for the broader community.
Community and social infrastructure, services and facilities	No community infrastructure will be impacted by the development.	Households have all indicated that they will move to areas close to where they presently reside. Most will gravitate towards Juni where access to facilities will also be improved. It is unlikely that the enlarged QA1 will directly affect the two churches or elementary school. Relocated individuals will benefit from the region-wide community infrastructure that will eventuate both from the Project discretionary programs and the Government commitments made in the LBBSA.
Access around site	A demarcation fence around the site will restrict access across the site.	A footpath will be constructed around the northern area of the site. This will be completed before access to the site is restricted.
Cultural Sites	Nine sites will be impacted	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 artifacts to be relocated by people themselves. Other material to be lodged with National Museum and overseen by archaeologists as per mitigation measures outlined in Hides Waste Management area Pre-Construction Survey Report.
Influx of migrants	Possible regional population increase and influx due to construction activities, improved services, and employment opportunities.	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. A police station already exists at Juni. The QA1 site is unlikely to be a specific locale that attracts outsiders or settlers because there will be no major construction activity and it will remain a quarry. The Project is currently developing Project-Induced In-Migration response plans using a community-based process. The outcomes of these activities will assist in developing an area specific plan for the Hides area. It is anticipated that these plans will be implemented by mid 2011.

6.2 Cumulative Impacts

When assessing the impacts of relocation for QA1 households, it is important to take into account the fact that this catchment is part of the wider Hides-Komo region, in which a number of Project infrastructure interventions will occur. This includes the Komo Airstrip, quarry sites and associated access, landfill sites, well pads, relocated schools, the Heavy Haul Road, existing and new camps, and spelines and pipelines. Hence, these assessments need to consider cumulative impacts of resettlement in the region, continual availability of suitable relocation sites, as well as increased pressure on available land and natural resource availability.

The Project resettlement experience to date suggests most affected landowners do self-relocate without undue and adverse impacts on their subsistence livelihoods or access to available land. The robust livelihood restoration programs will be able to monitor the circumstances of land and food shortage, and based on the case-by-case findings the Project will respond with further measures where any person or family suffers hardship or is worse off than was the case in the pre-resettlement phase.

7.0 COMPENSATION AND RESETTLEMENT STRATEGY

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 livelihoods and standards of living.

In addition to direct compensation payments, resettlement options include:

- **Relocation sites** will be self-determined by the affected persons though the Project will assist any relocated individual who does not have another site with supplementary vulnerable case assistance. This approach reflects the customary residence practices, and will obviate the need to construct "resettlement sites" or engage with "host" communities.
- **New housing** assistance will be provided for those who wish to build an improved bush-house; Project commissioned architect plans have already been developed and people will be assisted to locate a suitable builder. Additionally, the Project offers assistance to move housing materials, and provides timber.
- **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. This will include opportunities in terms of employment and small business, cash from rentals and other revenues.

7.1 Eligibility and Entitlements

The RPF provides a full schedule of eligibility criteria for compensation and entitlements that will be adopted for the Project. Damage and deprivation payments will have regard for the customary classification of landowners, landholders and land users with respect to their tenurial status and portfolio of land rights and responsibilities. Table 7-1 summarizes eligibility and entitlements relevant to the affected QA1 community for statutory damage and deprivation compensation. This includes entitlements to individuals for privately owned assets as well as entitlements to clans for communal resources.

Compensation will be paid to clans for various categories of compensation required to be paid under the Oil and Gas Act. Compensation payments will include damage to the surface, damage to trees and wildlife as well as compensation for the Clan's loss of use and enjoyment of Clan land. Compensation for loss of use and enjoyment is paid annually for so long as the project uses the land for project purposes. Entitlements for communally owned resources are reflected in the In-Principle Compensation Agreement (IPCA) for the QA1 area (IPCA Area 11, PLAF 11 - Dagia to HGCP Mbelopa/Tumbi Quarry).

Once the total amount has been defined by the Project in an In-Principle Compensation Agreement (IPCA) with landowning clan leaders and an Agency Agreement is executed firmly establishing the compensation owed, the compensation damage amount is accrued as a liability by the Company until payment can proceed.

Allocation of land between clans is agreed through a process of mapping and consultation. The clan areas are mapped on each site by the Project with the participation of local clan leaders. When payments are made to the clans, the clans will distribute the compensation in accordance with customary Clan principles to clan members.

Table 7-1: Eligibility and Entitlements

Eligibility	Affected Category	Assistance/Compensation	Considerations for Implementation
Houses and other Fixed Assets (Physical Relocation) - Resettlement Assistance Package			
Recognized owners of the assets and structures (identified in the ANUE Surveys by the cut-off date)	Category 1 Households with an available relocation home	Housing: The housing package totals K51,000. (a) Component 1) Household has the option of selecting K10,000 either in cash or deposited into a Bank Managed Fund - Interest Bearing Deposit or Savings Account, or as a deferred payment. (b) Component 2) Household will have K10,000 deposited into a Bank Managed Fund - Interest Bearing Deposit, or allocated as a deferred payment for a minimum of six months, on which the Company will provide a K400 bonus. (c) Component 3) Household will receive K30,000 for building and housing materials. Household has the option of selecting this as interest bearing deposit, or as a deferred payment, building materials, or savings account deposits. Alternative options with conditions are also available. (d) Component 4) For households with multiple wives and houses an additional sum of K10,000 will be provided to the wife of the household, upon completion of her house. The same applies to mature sons or daughters occupying a separate structure. (e) Transit assistance of K1,000. (f) Dismantling incentive of K500.	<ul style="list-style-type: none"> Clearly inform about site development and relocation schedules Consultation to determine list of options for materials, goods and equipment Delivery of in-kind packages will be negotiated upon agreement and delivery will start at the moment of relocation

Eligibility	Affected Category	Assistance/Compensation	Considerations for Implementation
		<p>Provided to all households:</p> <ul style="list-style-type: none"> • Transition rations for up to nine months (40 weeks). • Livelihood restoration measures directed at establishing and maintaining subsistence patterns. • Access without financial penalty to old house materials. • Replacement garden tools. • Health care program: malaria nets, and medical monitoring of relocated individuals' health. • Provision of Compensation Advisor to assist and advise on investment and business options. 	
	Category 2 Households with no available relocation land	<p>Support will be provided for finding suitable land for relocation</p> <p>Otherwise as for Category 1</p>	As for Category 1
Land Deprivation			
Recognized landowners	Clans or other groups (e.g. ILGs) with rightful recognized claim to communal land	<ul style="list-style-type: none"> • Clans within QA1 include Ware, Imini (Gela), Bebe and Warabia. Clan leaders are still to agree on the allocation of land within the quarry to each clan. • Annual payment for land deprivation as per guidelines set out in IPCA, includes compensation for use of, and damage to surface land, as described below: 	<ul style="list-style-type: none"> • 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.
		1. Compensation for the use and enjoyment of the surface of the land: 15 ha	<ul style="list-style-type: none"> • The Company will pay Landowners at a rate per year (currently negotiated at K700 but to be verified against market rates) for each hectare of land occupied (but not otherwise damaged) by the Company for depriving Landowner(s) of the use of the surface of the land, for cutting 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).
		2. Compensation for land surface damage: 10 ha	<ul style="list-style-type: none"> • If the surface of any land of the Landowner(s) is damaged by the Company, the Company will make a one-off compensation payment (currently negotiated at K2,575, to be verified against market rates) to the Landowner(s) for each hectare of the land surface which is damaged by the Company.

Eligibility	Affected Category	Assistance/Compensation	Considerations for Implementation
		3. Compensation for initial damage to naturally occurring bush, vegetation, birds, animals or fish: 15 ha	<ul style="list-style-type: none">The Company will make a single payment to the Landowner(s) for any damage on their land to the natural bush, birds, and fish (currently negotiated at K1,030, to be verified against market rates) for each hectare of land on which the Company damages the natural bush.
		Gravel Royalty: cubic meter	<ul style="list-style-type: none">The Company will pay royalty for every cubic meter of gravel, sand or stone within the QA1 license area measured in situ, which is taken and used by the Company for civil construction or maintenance works. This royalty was originally negotiated at K1.50 per cubic meter, plus a non-disruption premium of K0.30 per cubic meter. This rate was subsequently renegotiated at a higher rate.
	Individual/ household landowners for garden land	<ul style="list-style-type: none">Annual payment for land deprivation as per guidelines set out in the IPCA (as above if land individually owned).Compensation for loss of crops and other assets as per Damage to Trees and Crops below.Livelihood restoration measures as above.Provision of Compensation Advisor.	<ul style="list-style-type: none">As above for clan land. (Note that there is no privately registered land in the Project area.)
		<ul style="list-style-type: none">Vulnerable individuals and groups including aged, young, infirm and disabled will obtain the following:<ul style="list-style-type: none">Assisted transit;Provision of enhanced house facilities on request and after consultation; andOther assistance on request and after consideration.	<ul style="list-style-type: none">Identify all vulnerable households and the nature of vulnerability prior to resettlement, and monitor closely during implementation to ensure effective.
		Damage to Trees and Crops	
Recognized land and resource users and owners	Clans or other groups with rightful recognized claim to communal land	<ul style="list-style-type: none">Cash compensation based FRV for trees naturally seeded in affected area as identified in the IPCA, as included above for Land Deprivation.	<ul style="list-style-type: none">Clearly inform about site development and relocation schedules.One-off compensation to community (landowners group) directly and publicly to landowner.

Eligibility	Affected Category	Assistance/Compensation	Considerations for Implementation
	Individual/ Household landowners for trees and crops.	<ul style="list-style-type: none"> • Cash or in-kind compensation at FRV for affected area for crops and trees planted by individuals (excluding mature crops). • Compensation for garden infrastructure improvements (including garden fences and trenches). • Assistance to restore livelihoods through economic restoration programs. 	<ul style="list-style-type: none"> • Clearly inform about site development and relocation schedules. • Cash compensation at FRV. Households will assist with the verification of trees to ensure that full market rates are paid. • 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. • If significant portion of land established to gardens is lost, then physical relocation will be considered (as included above for Houses and Other Fixed Assets).

Eligibility	Affected Category	Assistance/Compensation	Considerations for Implementation
Reduced access to Land and Resources			
Persons/Clans recognized as landowners of land to which access is reduced	Clans or other groups with rightful recognized claim to communal land	<ul style="list-style-type: none"> Cash or in-kind compensation at agreed intervals until reduction in access ceases. Assistance to restore the livelihoods through economic restoration programs. 	<ul style="list-style-type: none"> Clearly inform about site development and relocation schedules. Cash compensation at FRV "Lost production" compensation will be considered for compensation. This means that if there is interrupted access to land during construction for a short time then affected people will be eligible for compensation for lost production – i.e. what they could have grown or done with the land had they had access. One-off payment or compensation at agreed intervals to individual/household owner directly. This will be done 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.
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.		
Impacts on Business and Employment			
All affected persons with monetary income through own business or as workers	Individuals with proven revenues from own business	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Clearly inform about site development and relocation schedules. Compensation will be assessed on a case-by-case basis.

Eligibility	Affected Category	Assistance/Compensation	Considerations for Implementation
	Individuals with proven loss of wages	<ul style="list-style-type: none"> Cash payment for proven loss of wages due to physical displacement. Training programs and employment related to local content development. 	<ul style="list-style-type: none"> Clearly inform about site development and relocation schedules. Compensation will be assessed on a case-by-case basis.
Impacts on Community Infrastructure			
Owners of Public Infrastructure	National, Provincial or Local governments, Clans or ILOs with recognized ownership of infrastructure affected by the Project	<ul style="list-style-type: none"> Infrastructure will be replaced to an as-before or higher standard. Alternatively, compensation will be paid at full replacement cost, without allowance for depreciation. 	<ul style="list-style-type: none"> 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 infrastructure	Relocation of community structures e.g. churches, schools, etc.	<ul style="list-style-type: none"> Full replacement and construction by the Project. Full replacement compensation and constructed by community. If social infrastructure requires relocation, a suitable location will be identified to allow continued access for those affected. 	<ul style="list-style-type: none"> Clearly inform about site development, relocation schedules, and potential impacts to infrastructure.

8.0 LIVELIHOOD RESTORATION PROGRAM FOR RESETTLED VILLAGERS IN THE QA1 AREA

8.1 Introduction

The livelihoods restoration program to be implemented across the Komo and Hides area was detailed in the HGCP RAP (Section 8.0). This program will be inclusive of all households affected by resettlement across the Project area, including QA1 affected households. This section provides an overview of the program as described in the HGCP, with specific reference to QA1 as appropriate.

8.2 Implementation Schedule

Implementation will be phased, with the first phase directed at replacing mainly existing gardens and pilot agribusiness opportunities, and the second phase geared at the introduction of new opportunities, training in non-agricultural skills and diversification. There will be some overlap between phases. The proposed approach and timing is illustrated in Table 8-1.

Table 8-1: Implementation Schedule

Time Frame	2011				2012
Phase/Activity	Q1	Q2	Q3	Q4	Q1-4
Phase 1:					
Initial interactions to commence program – all households					
Individual household meetings – identify issues/needs					
Training needs assessment					
Facilitate access to agricultural inputs, particularly planting material					
Monitoring of gardens – household visits					
Collate information on possible agricultural support initiatives					
Establish demonstration projects and plots					
Initiate non-agricultural training programs					
Phase 2:					
Ongoing monitoring of gardens – household visits					
Ongoing group training sessions					
Outreach on fresh food production, animal production and other initiatives					
Implement selected projects					
Non-agricultural training programs					
Monitoring of livelihood restoration program					

8.3 Resources Needed to Undertake the Livelihood Program

The Livelihood Restoration (LR) Team will be based at Nogoli as well as Komo to support all the resettlement projects in the area. Each area will require varying levels of staffing according to their stages of implementation. QA1 is the seventh program to be implemented after Komo.

The plan is for each household being resettled to be assisted for two years after they move location. Thus, the duration of the program in the QA1 area is from the first quarter 2011 to fourth quarter 2012.

9.0 GRIEVANCE MANAGEMENT FRAMEWORK

The resettlement process for the QA1 households will consider grievances through the Grievance Procedure, which will apply across all Project activities. The Grievance Procedure is available to people affected by displacement, other local populations residing in the Project Impacted Area, and other stakeholders directly affected by the Project.

The Grievance Procedure that has been adopted for the QA1 RAP has been defined in the RPF. The Project will disclose information about the Grievances Mechanism to the affected QA1 community, adjoining landowners, and interested persons and organizations. The transparency and fairness of the process will be explained through both verbal (via regular stakeholder meetings) and written (newsletters, website, posters, etc.) updates.

10.0 ORGANIZATIONAL ROLES AND RESPONSIBILITIES

Overall responsibility for the planning, implementation, and monitoring of the QA1 resettlement program rests with the Company as specified in the RPF. The Company's Social Programs Team will be undertaking these activities for the QA1 program. Further details of the organizational structure of the Company are provided in the HGCP (Section 9.0) RAP.

11.0 MONITORING AND EVALUATION

The purpose of the M&E system is to provide Project management, and directly affected persons, households and communities, with timely, concise, indicative information on whether compensation, resettlement, and related development investments are on track and achieving Project goals. It also aims to ensure that physically and economically displaced persons have had the opportunity to, at least, restore their livelihoods and standards of living 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.

Preliminary monitoring of implementation activities will commence at the QA1 site when RIT and ELC representatives monitor the delivery of rations, and payment of transit allowances to affected households as part of the household consultation and negotiation process. The Project will undertake bi-annual outcome evaluation and impact baseline monitoring for each impacted resettlement site, which will culminate with the completion audit after two to three years.

Further details of the monitoring process to be implemented can be obtained from the HGCP (Section 10.0) RAP.

12.0 RESETTLEMENT IMPLEMENTATION SCHEDULE

Table 12-1 sets out the tasks required 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.

Table 12-1: Implementation Schedule

Activity or Task	Actions	2011						
		J	F	M	A	M	J	J+
Planning	Completion of RAP							
Approvals	Internal EHL approval of the RAP							
	RAP approval by Lenders' Independent Environmental Social Consultant (IESC)							
	Internal approval of detailed implementation work plan							
	RAP Summary to community							
	Ration & building material mobilization							
Land Issues	Confirm resettlement sites & water sources							
Confirm and finalize compensation agreements	Carry out final identification of vulnerable households requiring assistance							
	Verify inventories of affected land and assets (incl. special valuations)							
	Finalize entitlement contracts (housing and compensation agreements)							
	Transit allowance, distribution tools & nets							
Compensation payments	Cash Payments							
	Ration distribution							
	Housing package, distribution materials & advisors							
	IBD Deposits							
Relocate households	According to phases of construction							
Water supply	Provision of alternative water supply							
Graves, spiritual & other cultural sites	Relocate / recover							
Livelihood restoration and development	Replacement of gardens							
	Non-agricultural training & agribusiness programs							
Verification and monitoring	Design & implementation of monitoring and evaluation system (ending Nov 2012)							
	Local advocacy & compensation advisors							
	Internal monitoring (to 2012)							

Activity or Task	Actions	2011						
		J	F	M	A	M	J	J+
	External evaluation (including completion audit)							

13.0 COST AND BUDGET ESTIMATE

Table 13-1 provides a summary of costs to replace and compensate assets as defined in the housing and compensation agreements, community assets and mitigation programs to restore and improve livelihoods. In addition, provision is included for the one-off IPCA payments to the clans, who also receive an annual rental payment of K700/ha.¹⁰ Total costs for the KLF resettlement process will be in the order of US\$1.5 million, as summarized in Table 13-1.

Table 13-1: Resettlement Costs

Item	Total US\$ (million)
Asset and garden compensation ¹¹	0.90
Livelihood and other assistance	0.32
Community development projects	0.13
Other	0.06
IPCA payments	0.04
Total	1.45

¹⁰ All IPCA payments will be reviewed to confirm equivalence to FRV.

¹¹ Tree and garden crop compensation payments will reflect FRV.