

17. SOCIO-ECONOMIC ENVIRONMENT: LNG FACILITIES

17.1 Introduction

This chapter summarises the socio-economic and cultural environment of the proposed LNG Facilities onshore and marine components, which is described more fully in Appendix 26, Social Impact Assessment (SIA). This chapter describes the methods and sources of information (Section 17.2, Methods and Sources of Information), the LNG Facilities project impact area (Section 7.3), the ethno-linguistic groups and social organisation of the project impact area (Section 17.4, LNG Facilities Cultural Groups, and Section 17.5, Social Organisation), the status of existing social infrastructure (Section 17.6, Health, Section 17.7, Education, and Section 17.9, Transport and Communications), economic activity (Section 17.10, Economic Activity), and government and governance (Section 17.11, Government and Governance).

17.2 Methods and Sources of Information

The method by which the SIA was conducted conforms to PNG and international guidelines for the conduct of SIA research (see Appendix 26, Social Impact Assessment).

The research for the SIA included interviews by specialists in the project area and review of the published historical literature. Table 17.1 lists the studies undertaken in the vicinity of the proposed LNG Facilities site during 2007 and 2008.

Table 17.1 Previous studies undertaken in the vicinity of the proposed LNG Facilities site

Research Study/Report	Date	Scope
LNG Facilities Site Archaeology and Cultural Heritage Studies/Reports		
Archaeological research: LNG and Marine Facilities	2007 to 2008	See Chapter 16, Archaeological and Cultural Environment: LNG and Marine Facilities.
LNG Facilities Site SIA Studies/Reports		
Household and village survey: greenfield areas of villages in the vicinity of the LNG Facilities site (Lea Lea, Papa, Boera and Porebada)	2007 to 2008	SIA household and village surveys were conducted. A total of 286 household surveys (comprising 75% male and 25% female), covering 30% of the catchment and four census units, were undertaken. In addition, four village surveys, which covered 100% of the census units in the project area, were conducted.
LNG Facilities site reef usage survey (Papa, Lea Lea, Boera and Porebada)	2007	All river traffic and mangrove reef usage was monitored for seven days. Study examined gender-nuanced subsistence behaviour, activity and fish types.
LNG Facilities site infrastructure status report (Papa, Lea Lea, Boera and Porebada)	2008	All health, education, water and sanitation infrastructure and water collection activities in the area were examined. The report included project landowner wish-list of development needs.
LNG Facilities site gender impact assessment report (Papa, Lea Lea, Boera and Porebada)	2008	An examination of women's issues in the LNG Facilities site environs, detailing women's groups, activities, subsistence patterns, market selling, and domestic issues was undertaken. Recommendations were made concerning gender issues.

Table 17.1 Previous studies undertaken in the vicinity of the proposed LNG Facilities site (cont'd)

Research Study/Report	Date	Scope
LNG Facilities Site SIA Studies/Reports		
LNG Facilities site road signage and status, market trading, traffic movement and accident surveys	2008	Field monitoring of all traffic and pedestrian movements, road usage and accidents, trading activities, and road signage was undertaken and recorded: • 5,481 traffic movements. • 140 interviews conducted concerning road usage and problems. • 140 trading surveys. • 45 entries concerning road signage, speed bumps, roundabouts, etc.
Health impact assessment (HIA) in the vicinity of the LNG Facilities site (Lea Lea, Papa, Boera and Porebada)	2008	The HIA was a detailed and rigorous review of the substantial health-related databases (e.g., HIV, tuberculosis, malaria) that were available and which included PNG Government reports for the period 1990 to 2007, international aid monographs (e.g., AusAID), PNG Institute for Medical Research publications and peer-reviewed published scientific or medical articles. The study was preparation for a follow-up 2009 Public Health Impact and Monitoring Plan.
Full-scale Social Mapping and Landowner Identification (SMLI)		
LNG Facilities site (Lea Lea, Papa, Boera and Porebada)	2008	SMLI fieldwork and report for PNG LNG Project on the LNG Facilities site. The terms of reference for this SMLI were developed with endorsement by Department of Petroleum and Energy (DPE) and were defined as follows: • Research Overview: Provide a review of relevant research concerning the licence area and landowners under investigation, i.e., history of contact, anthropological investigations, regional connections and brief identification of province, district, local-level government and ward level identification. • Social-Cultural Context: Detail who the ethnic groups are in the licence area (e.g., Huli, Febi etc.), talk about the regional context (highlands, lowlands, coastal, etc.), linguistic situation (languages spoken), history of settlement and migration, pre- and post-contact history. • Social Organisation: Provide a description of the clan structure, migration history, provenance and present organisation of people within the target areas. This is to include social structure/group formation (e.g., clan structure), gender, marriage, trade and exchange, warfare, and inter-tribal relations, and modes of settlement (e.g., village, household, hamlet) should be addressed. These considerations to include principles of group formation (kinship and descent), leadership, identity and genealogies. Sample genealogies of the main impacted groups should be collected. Some mention of customary dynamics of group formation and change, i.e., how and when new groups are formed, are to be included. • Mapping Results/Findings: Provide a preliminary distribution map showing the relative positions of major groupings such as clans in the area – a 'group to ground' grid – with an understanding of applicable land tenure principles and concepts.

Table 17.1 Previous studies undertaken in the vicinity of the proposed LNG Facilities site (cont'd)

Research Study/Report	Date	Scope
<i>Full-scale Social Mapping and Landowner Identification (SMLI)</i>		
LNG Facilities site (Lea Lea, Papa, Boera and Porebada) (cont'd)	2008 (cont'd)	• Ecology, Subsistence, Landscape and Settlement: Provide an understanding of the subsistence and economic systems of the licence area landowners. This should detail modes of subsistence (e.g., fishing, agriculture) and use of physical environment, customary concepts of 'residence', 'ownership', 'use', 'compensation' and the principles which govern claims to all forms of resource ownership (i.e., land, trees, water, hunting areas etc.). Any present land disputes likely to impact project should be explained and some consideration given to the nature of what might be regarded as sacred sites and other forms of cultural heritage. • Forms of Community Representation: Provide a summary indication of present representation systems in the target licence area. This should detail customary, community and introduced forms of representation (political leadership, landowner companies, incorporated land groups, local-level governments, wards etc.,) types of disputes and resolution mechanisms (moots, village courts, local/district/supreme court structures), religious, gender-based and recreational organisations and their distribution. • Significant Social Issues and Recommendations: Provide an overview of any significant social issues that may need to be addressed in the licence area to include relations between landholders/landowners and government and or developer. • Bibliography: Provide a brief indication of key references used or relevant to the area under consideration.

17.3 LNG Facilities Project Impact Area Description

The project impact area encompasses the people and places likely to be immediately and directly or indirectly impacted by the project and its associated benefit streams.

The proposed LNG Facilities site is located in the Central Province of Papua New Guinea, west of the Owen Stanley Range (Figure 17.1). The province occupies 29,900 km² along the south coast of the PNG mainland. The coastal area from Pari to Lea Lea has a mean annual rainfall of 995 mm and a long dry season.

The LNG Facilities site and the four nearest villages of Lea Lea, Porebada, Boera and Papa are located within the Hiri Rural Local-Level Government area, which has a population of approximately 20,000 at an average density of approximately 10 persons/km².

17.4 LNG Facilities Cultural Groups

The Koita and Motu linguo-cultural groups in the vicinity of the proposed LNG Facilities range from Gaba Gaba east of Port Moresby to Manumanu 50 km to the northwest. The initial migration of Koita was part of a diaspora of Koiarians both north and south from a population centre in the mountain hinterlands. Oral tradition says they separated from Koiari some 19 generations ago in

the Sogeri area, and some seven generations ago they joined the Motu on the coast. The weight of anthropological opinion is that the Koita moved towards the coast within the last 200 to 300 years; by then, some Motu were already established along the coast. The Western Motu trace their origins to two villages – Taurama and Motu Hanua (Motupore) – in the Bootless Inlet area. The SIA has estimated the combined Western Motu and Koita population to have been about 3,200 persons at the time of first European contact in 1873, and observes that the Motu–Koita combine into a single ‘portmanteau’ social group of:

two distinct languages and cultures...[and] two distinct subsistence ways of life and orientations towards land and territory, that have converged on the same village space.

The fragility of this bicultural construct and the inherent indeterminacies in each partner’s account of their indigenous status will inflect their relations with each other and with the PNG government and developer throughout the life of the LNG project.

In an important sense, all the current residents of the project impact area are not ‘indigenous’ to the area: Lea Lea and Boera have a fairly long history, but it is still a history that begins after the initial Motu migration of 300 years ago. The Koitabu, on the other hand, were probably technically the original ‘landowners’ of the village areas, but the coastal areas remained uninhabited by them until the Motuans arrived.

The SMLI report (see Appendix 26, Social Impact Assessment) also notes that ‘although the story of the Koitabu migration in the Papa-Lea Lea-Kido area is important to the present-day tribal identity of people in the area, whether the fact of these migration gives “land rights” to all the present descendants of the ancestors who so migrated is another question – a question both anthropological and judicial’.

Figure 17.2 shows the ethnic groups affected by the project.

Motu is the dominant language of the LNG Facilities site project impact area, but Koita is spoken in Papa.

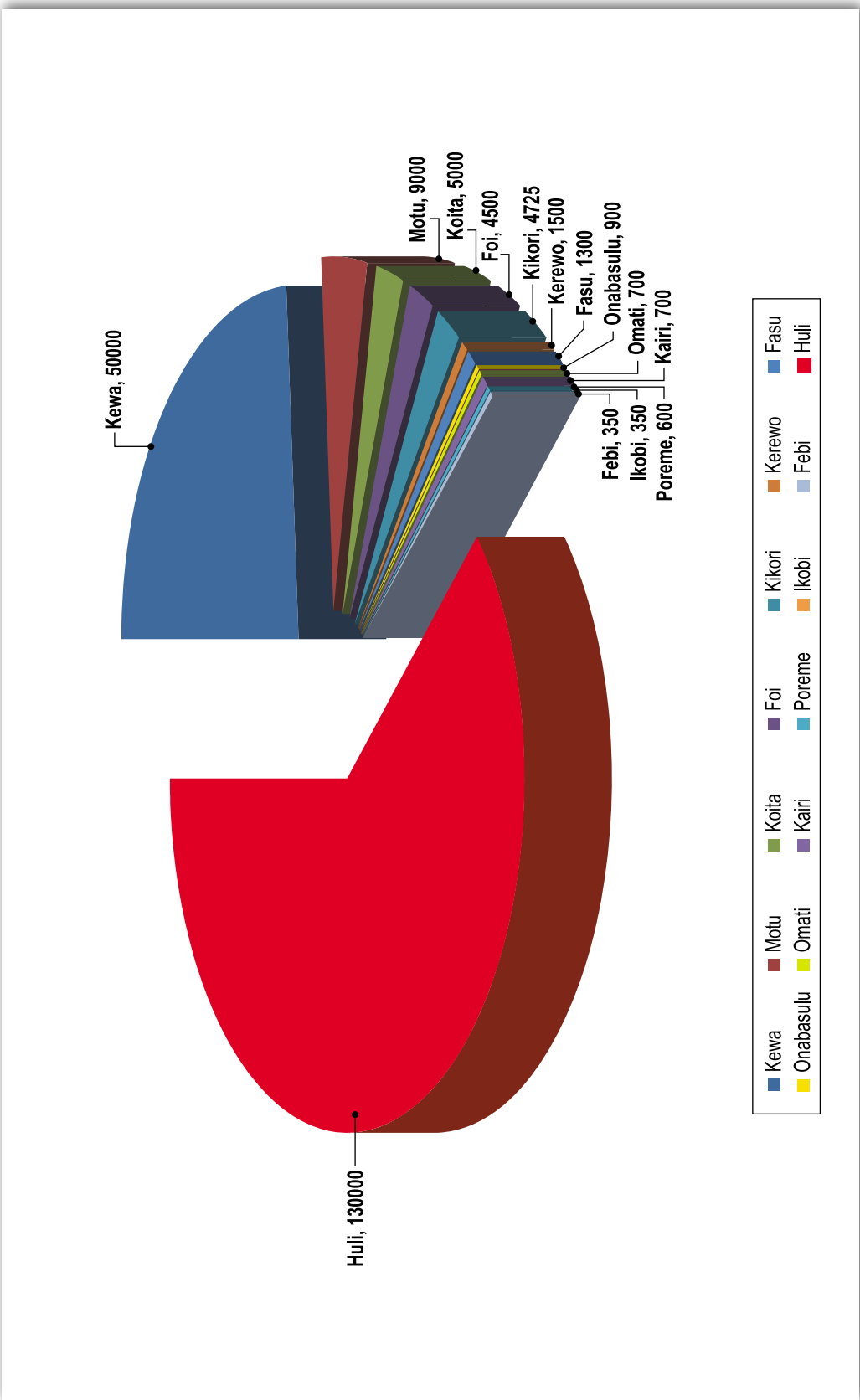
The SIA notes that the old Boera village site at Ava Garau was very large and once ‘probably the most important village in the Port Moresby area’.

The area was involved in the regional *hiri* system of trading Motuan ceramic pots for sago, canoe logs and artefacts with villages in the Gulf of Papua and to the east. In an important sense, the PNG LNG Project appears here to be retracing and redefining in a contemporary context precolonial trade and exchange between the project impact area populations and Gulf populations.

17.5 Social Organisation

The social structure of most of the villages in the proposed LNG Facilities site project area appears predominantly based on agnatic descent groups (*iduhu*), with both ascribed and achieved leadership.

In regard to leadership patterns in the Koita–Motu region, the early literature identified what the authors referred to as ‘chiefs’. One author, surveying the early literature on Motu–Koitabu, states, ‘elements of social control were embedded in kinship and exchange relations, sorcery and the sanction of tutelary spirits, rather than centralized in individual political leaders’. Motu–Koitabuans have a ‘robust genealogical memory,’ and middle-aged villagers can recall seven or eight generations of their ascendants predecessors.



While genealogical knowledge was one criterion of authority and power, there were achieved leadership roles as well. As the SIA states, an *iduhu* leader can be called in terms of his land controlling functions a *tanobiaguna*. The term *kwarana* meaning 'head' was also used, and the terms *iduhu kwarana* and *iduhu biaguna* were more or less synonymous: 'an *iduhu kwarana* is usually the *iduhu tanobiaguna* (land controller), unless he chooses to hand this duty to another senior male in the *iduhu*'.

In the modern world of the Motu–Koitabu, business success, high rank in public-service employment, and success in provincial and national politics can also bring men recognition and deference in village society. These men can be referred to as *lohia*... particularly if their power is seen to be used for the benefit of their own people, that is to say, if their position in the integration of village society with capitalist society and its administrative bureaucracy has been advantageous to their group and not just to themselves.

The early literature on Koita and Western Motu social organisation identified sections of a village associated with dispersed, named descent groups. The relationships between these units was unclear and, as one author noted:

the listing disguises complications. Koita sections are not easily identified and reconstructed. Part of the problem is that segmentation, merging, migration, adoption, and intermarriage have complicated the relationships within and without villages.

Another author noted that the *iduhu* consisted of:

one or more lines of houses built on piles over the sea at an angle to the coastline by people who give themselves an *iduhu* name. It is primarily a residence unity based upon one or more separate lineages of patrilineal emphasis, and hence may be differentiated from a clan, which, in a technical sense, must consist of people claiming common descent.

Thus, the *iduhu* appears to be a unit of social recruitment, which is flexible enough to incorporate non-agnates (non-patrilineally-related individuals). Residentially, *iduhu* constituted separate parts of the village. The pressures of migration and warfare will have seen individual *iduhu* split or merge; and so *iduhu* of the same name can be found in different villages, often with an additional name for differentiation.

The SMLI report (see Appendix 26, Social Impact Assessment) identifies an increasing emphasis on the patrilineal and land-owning function of the *iduhu*. Motuans writing about their own social system since Independence have also stressed its land-owning function as paramount.

17.6 Health

Water and sanitation are the main health issues for the villagers of the proposed LNG Facilities site area, with the SIA noting that:

The four villages of the Project Zone all face severe problems in providing themselves with regular supplies of safe potable water ...

Table 17.2 summarises the water supply situation.

Table 17.2 LNG Facilities site area potable water supply status

Portion 152 Village	Potable Water Supply Status
Boera	Water from the Port Moresby mains is available four days a week via 12 standpipes. Houses over the sea require the women to collect water from the standpipes. Some houses pipe water at a cost of K5 per week; water in containers costs from 10 to 20 toea per litre.
Lea Lea	There is one well 2.5 km north of village and only accessible by foot. Women take four trips a day averaging 10 to 20 km on foot each. In the dry season, water is trucked from Port Moresby at a cost of K3 per 20-litre container (see Plates 17.1 and 17.2).
Papa	There are four wells (two with water limits), and many women will rise at 4 a.m. to avoid carrying their household's water (typically two 20-litre containers) during the heat of the day. The bores are fed by underground springs and dry up between May and November, when water must be trucked from Port Moresby. The bore water is reported to cause skin rashes on children.
Porebada	Port Moresby mains water is available via 12 taps in the village at a cost of 10 toea for 5 litres. (See Plate 17.3 for a summary of water usage over a five-day period.)

Some latrines were observed in Boera (Plate 17.4) and Papa, and these drained into the ocean.

Figure 17.3 shows the distribution of health facilities within the LNG Facilities site project impact area.

Based on data analysed in the Health Impact Assessment (HIA) 'Baseline Data Review' tuberculosis is undoubtedly under-diagnosed. In addition, there is no formal case finding system; hence, actual prevalence rates are likely to be significantly higher than official reported levels. Tuberculosis and HIV/AIDS are covariate with each other in almost all epidemiological settings; for example, in sub-Saharan Africa, approximately 70% of the tuberculosis cases are HIV positive.

Tuberculosis prevention and control programs are weak or non-existent in the proposed LNG Facilities site environs.

The overall 2008 HIV prevalence rate in Papua New Guinea is estimated at 2%. There are significant data gaps regarding the baseline burden of sexually transmitted infections, including HIV/AIDS rates for the LNG Facilities project impact area. Typically the 'best' surveillance of HIV prevalence data comes from antenatal clinic sites. The closest surveillance sites for the LNG Facilities site are located in Port Moresby; however, this data is unlikely to be representative of the situation in the vicinity of the proposed site; hence, there is a significant data gap.

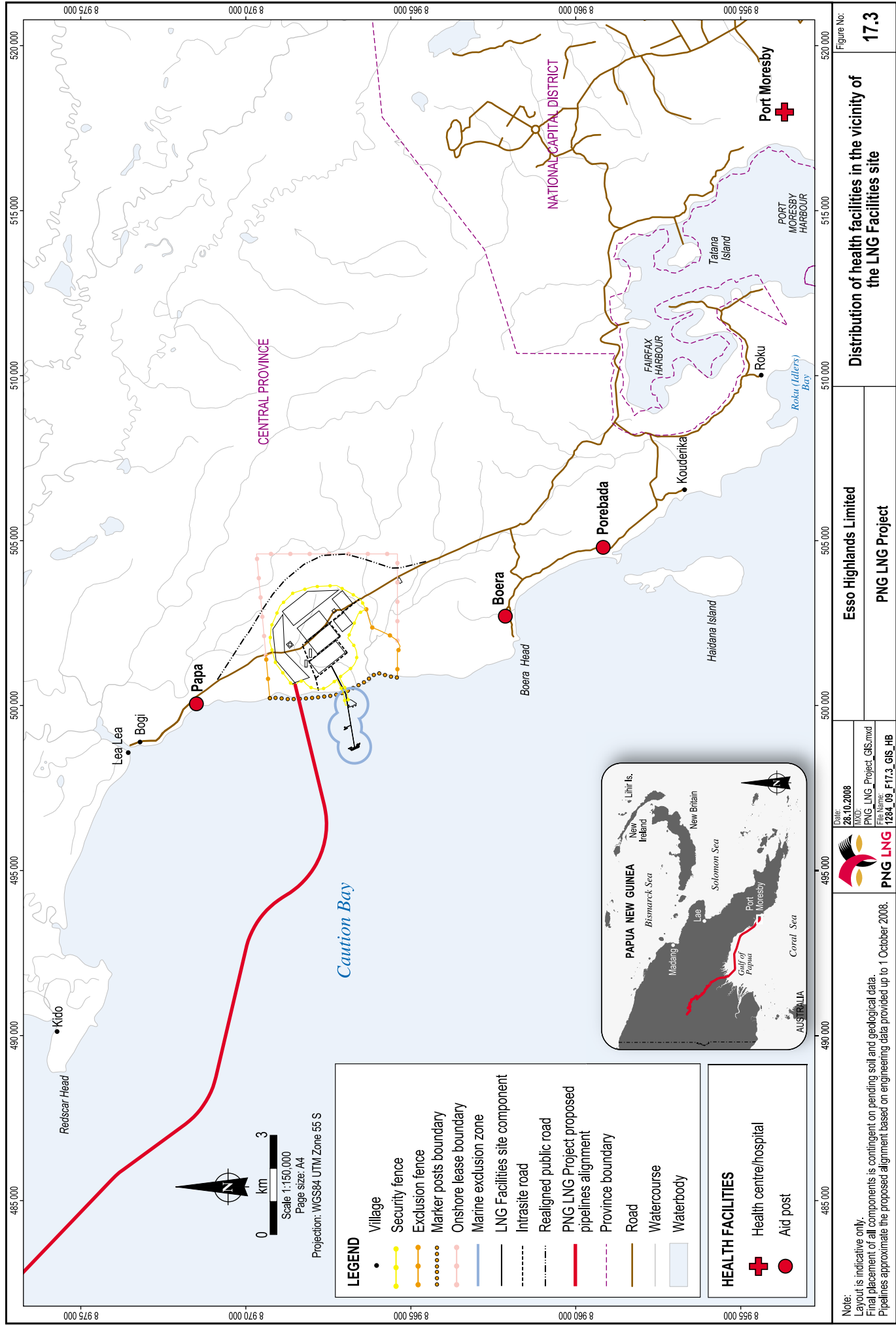




Plate 17.1
Lea Lea water track



Plate 17.2
Fetching water at Lea Lea

[illegible]

Plate 17.3
Five-day summary water usage in Porebada



Plate 17.4
Latrines in Boera



Plate 17.5
Market trade stall, Boera village

Information obtained from local women in Boera revealed that two young women in the community in their early 20s recently died from HIV/AIDS, although this was not medically verified by the HIA team. The women's group stated that most of the girls in the village only finish grade 10 and cannot afford to attend further education in Port Moresby. Hence, their concern is that these local young girls will be attracted to non-local men moving into the area on a temporary transactional basis, increasing sexually transmitted infection and HIV/AIDS risks.

Input received from the PNG Business Coalition Against HIV&AIDS indicated that, on weekend mornings after payday, the roadway from Port Moresby leading north (towards the proposed LNG Facilities site), is congested with sex workers. Therefore, there is every reason to believe that, during active construction and operations, there will be significant sexually transmitted infection issues.

Assessment of impact relative to sexually transmitted infections and HIV/AIDS is directly related to:

- Influx of job seekers and extended family members.
- Changes in level of income.
- Inadequate diagnosis and treatment of curable sexually transmitted infections in local health care facilities.
- Voluntary counseling testing capabilities in the proposed LNG Facilities site area are non-existent.
- Truckers and security (especially military) forces typically have higher HIV/AIDS rates than the general population; however, rates in truckers and security forces originating from Port Moresby are unknown.
- Project influx of men with money mixing with local vulnerable young women.
- Attraction of sex workers into the communities due to men with money.
- Lack of understanding and knowledge regarding prevention and treatment within the community.
- Stigmatisation associated with HIV/AIDS.

17.7 Education

Figure 17.4 shows the educational establishments and Table 17.3 gives enrolments for the villages in the LNG Facilities site project impact area. A comparison between national government and village records for nominally the same data showed that the national government records understated both attendances and the number of teachers.

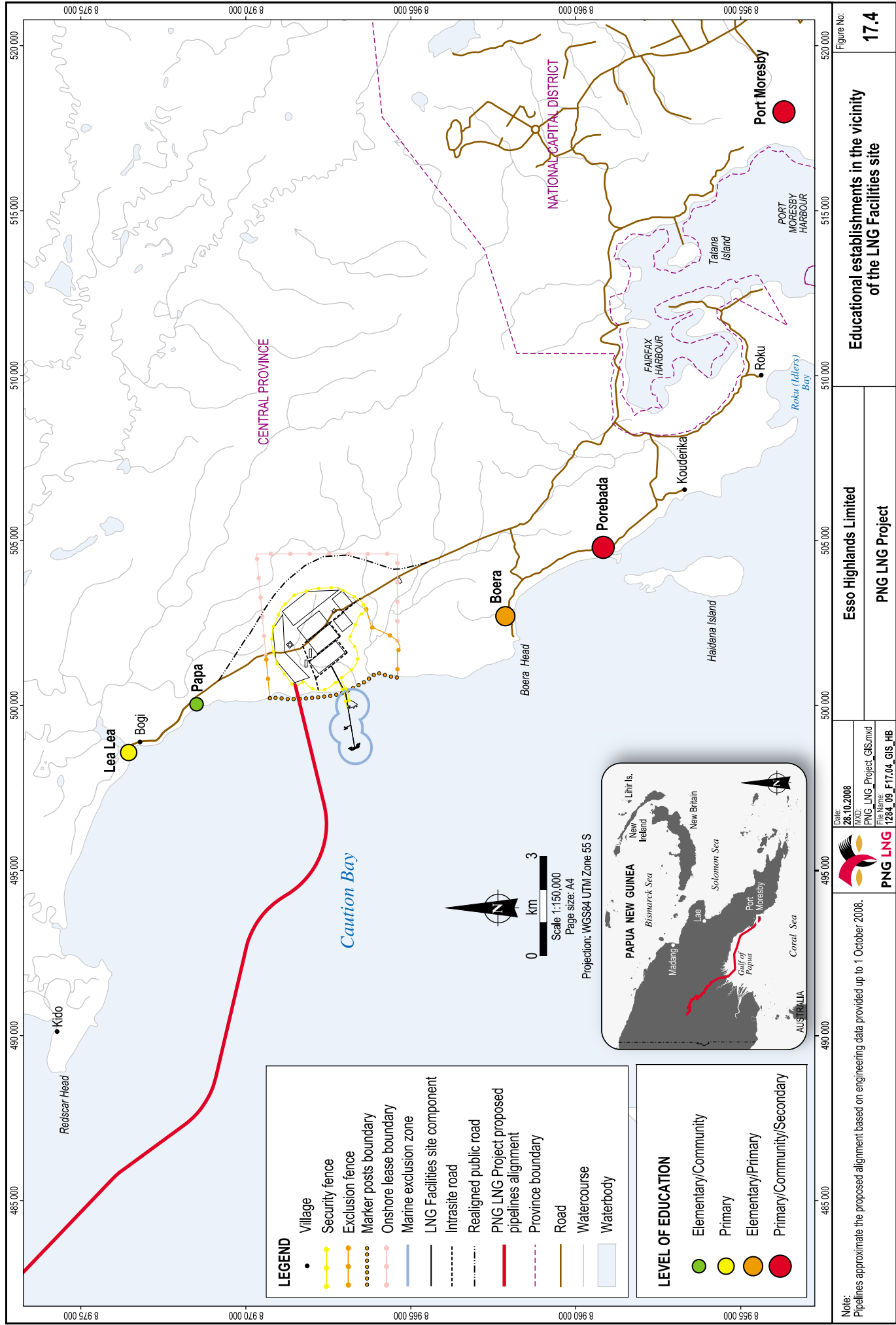


Table 17.3 Comparative education statistics for villages in the LNG Facilities site project impact area (2007)

Village	School Type	Students (Village Record)			Students (Government 2007 Record) ¹			Teachers (Village Record)			Teachers (Government 2007 Record)		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Porebada	Secondary	180	113	293	154	111	265	10	4	14	8	3	11
	Primary	319	286	605	300	275	575	11	12	23	9	11	20
	Elementary	186	174	360	142	126	268	9	5	14	7	5	12
Boera	Primary	105	97	202	121	121	242	6	3	9	7	1	8
	Elementary	42	22	66	75	62	137	3	2	5	2	2	4
Papa	Primary	73	67	140	55	57	112	3	1	4	3	1	4
	Elementary	43	21	64	55	60	115	1	2	3	1	2	3
Lea Lea	Primary	160	155	315	168	137	305	8	4	12	8	6	14
	Elementary	136	76	212	98	81	179	6	3	9	6	3	9

¹Source: Michael Peters, National Education Department Statistics Branch.

The gender study of the LNG Facilities site project impact area (see Table 17.1) had the following to say about education and women:

An older woman explained villagers' reasons for not supporting girls in school as anchored in a belief that 'the boy looks after his parents, [whereas] the girl goes to another family'. As a consequence boys are supported in their desire to complete school but girls are taken out when cash is not available to pay school fees. The grandmothers in Boera stated that 'only about 10% of village girls now go on to further education, the rest stay in the village', reinforcing the key issue of education, relevant well-paid work, and provision of opportunities for the young women of the village.

The cost of schooling in 2008 (which increases each year) was K150 per child for lower primary, K230 per child for upper primary, K750 per child for secondary and vocational centres, and K800 per child in years 11 and 12 (Johnson, pers. com., 2008). Costs are even higher for students who must board away from home to access education. These are significant sums of money for villagers to acquire from small-scale trading.

17.8 Agriculture, Fishing and Subsistence

The LNG Facilities site is on a coastal plain backed by low hills. The land was cleared early in the 20th century for plantation agriculture, but none takes place now. Only the mangrove strip along the coast remains of the original vegetation (see also Section 12.3.2, Vegetation and Flora).

Motu–Koita agriculture is based on yam, banana and cassava. Yam gardens are cleared in September and harvested between April and June. Shallow soils, low rainfall, seasonal inundation and land degradation make for poor agricultural potential. The men hunt on and near the LNG Facilities site for deer and wallaby, mostly in the Papa and Lea Lea hinterland.

Fishing is one of the most important economic activities in the villages, and market sales of fresh fish are more important than of betel nut and fresh agricultural produce. The day's catch of a good fisherman with a boat can fetch up to K250 at Port Moresby's Koki market (see Appendix 24, Resource Use Survey of Caution Bay).

Table 17.4 summarises, from the landowners' perspective, the importance of the coral reef and mangrove to village livelihoods, with an average usage of nearly four days a week for respondents of both genders. The fishing offshore is predominantly by men. In the mangroves, women forage for mud crab and shellfish, while men collect firewood. These activities take place all year round.

Table 17.4 Responses to questions about reef and mangrove use

Household Survey Question No.	Question	Response	
J22	Are you using the reefs?	Yes – 92.3%	
J23	How many times a week do you use the reef?	3.9 days average	
J24	Do you sell the produce you get from the reef?	Yes – 68.1%	
J25	Where do you sell the produce?	Port Moresby	41.8%
		In village	36.0%
		Koki Market	20.6%

A reef and mangrove monitoring survey was undertaken over seven days (Annex A of Appendix 24, Resource Use Survey of Caution Bay). A total of 63 vessels (20 banana boats, 4 dinghies and 39 outrigger canoes) involving 181 people in activities directly related to subsistence, were recorded. The survey concluded:

Observations on marine resource usage in the area between Boera and Papa indicated that both villages are heavily dependent on the sea and the mangrove gaps for their livelihood....The portion [of the catch] that is not consumed...is taken to Port Moresby City and sold at Koki and Hohola market[s]...the women go to the mangroves to collect crabs, clam shells and firewood on a weekly basis.

The mangroves are also the source of snails for fishing bait...and [of] building materials. Fishing, collecting shellfish and cutting firewood and building materials appeared to consume between four and five hours daily per person and [are said to take place] all year round.

Women's main income-generating activity is collecting shellfish. A boat owner will take women to the reef and nearby islands. For K5, they will be taken to Fava; and for K10, they will be taken to Irikina. Shellfish is used in the household and sold; shells are used for decoration and the contents for eating. In a subtle distinction, men catch lobsters because they must go 'further out' from the shore and must dive for them: 'this is not women's work' (Johnson 2008). While women articulated concern that the lobster supply not be damaged by the project, stronger concern was expressed about the potential environmental impact of the project on the mangroves where women collect coconut and mud crabs to earn a living via 'women's work'. They also collect shellfish at low tide, and may consume and sell both the coconut and mud crabs.

17.9 Transport and Communications

Figure 17.5 shows the road network in the vicinity of the proposed LNG Facilities site. The sealed road from Port Moresby services the villages of Lea Lea, Bogi, Papa, Keiva Village, Boera, Porebada, Kouderika, Koukou, Ranu Hadadi, Baruni and Kanudi, Redscar High School and Metago Bible College, the Curtain Bros wharf and the InterOil Napa Napa refinery.

17.9.1 Road Survey Method

Roads between Lea Lea and Baruni junction were surveyed over a seven-day period, and the results were reported in Appendix 21, Road User Survey, as follows:

- 140 interviews were carried out of people along the road between the villages listed above and Baruni junction. Interviewees were asked about road safety, seasonal traffic trends and reasons for road use.
- Traffic signs and controls along the road between Lea Lea and Baruni junction were recorded.
- Trade stall activity along the road between Lea Lea and Baruni junction was recorded by goods sold, gender of vendor, and location and type of vending medium.
- Road use was recorded during daylight hours for a seven-day period along the road at the locations shown in Figure 17.5 (5,481 traffic movements were recorded).

17.9.2 Road Survey Results

The road survey revealed the role of the road between the proposed LNG Facilities site and Port Moresby, as follows:

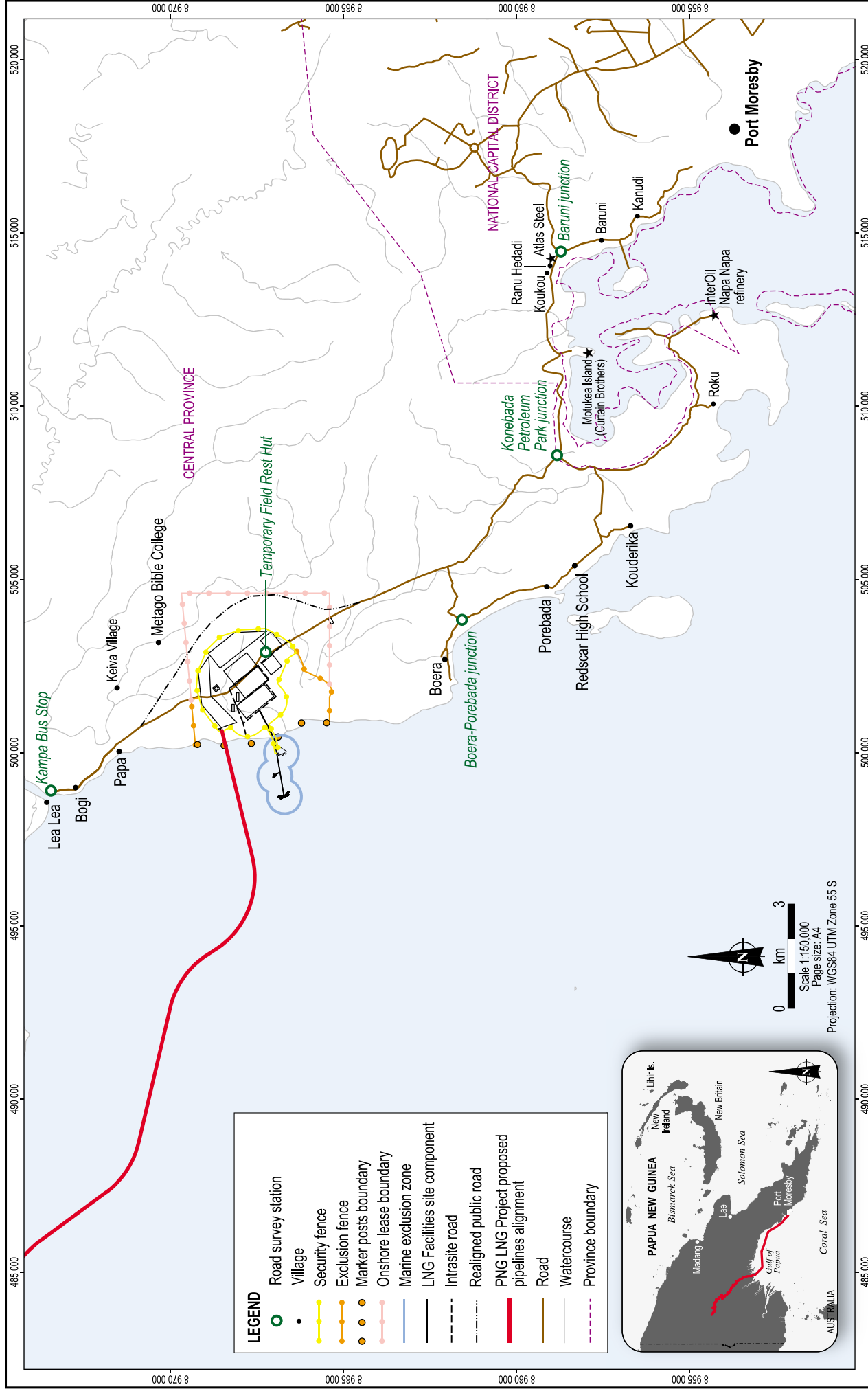
- Access to Port Moresby and other villages, mainly for shopping, market trading and work.
- Subsistence activities, such as collecting firewood and water.
- Roadside trading between Lea Lea and Port Moresby, from vehicles, under houses, as separate stalls or by walking traders, principally at Baruni and the Konebada Petroleum Park turnoff. The extent of this highlighted the importance of roadside trading as a source of cash in subsistence communities.

Daily traffic averaged 500 vehicles at Baruni junction and approximately 140 vehicle journeys through the Konebada Petroleum Park turnoff, mostly utilities or trucks.

Users cited road condition and reckless driving as the major safety concerns. However, 75% of those questioned did not report an accident in the last six months. Moreover, apart from the narrow road at Baruni, the reported accidents were thought to have been caused by stray animals and criminal behaviour rather than the state of the road or traffic conditions.

17.9.3 Road Condition

The road between the proposed LNG Facilities site and Port Moresby is paved with a stone wearing-surface in asphalt. It is generally in reasonably good repair but has the following shortcomings:



- Potholes between Konebada Petroleum Park turnoff and the proposed LNG Facilities site, with only a 5-m-wide pavement.
- A general lack of signage between Baruni and Papa.
- Black lane lines, which are not visible at night.
- Home-made speed humps around Baruni, where the road is too narrow for two-way traffic.

17.9.4 Analysis of Traffic Movements by Vehicle Type

Table 17.5 lists the public motor vehicles operating within the environs of the proposed LNG Facilities site – essentially the privately owned ‘public transport network’ to Port Moresby and between the villages.

Table 17.5 Operating public motor vehicles in the LNG Facilities site environs

Village	Vehicle Type	No.	Passenger Capacity
Porebada	Flat top	5	25
	Bus	3	25
	Mini bus	2	15
Boera	Flat top	2	25
Papa	Flat top	2	25
	Mini bus	2	15
Lea Lea	Flat top	5	25
	Bus	1	25
	Mini bus	1	15

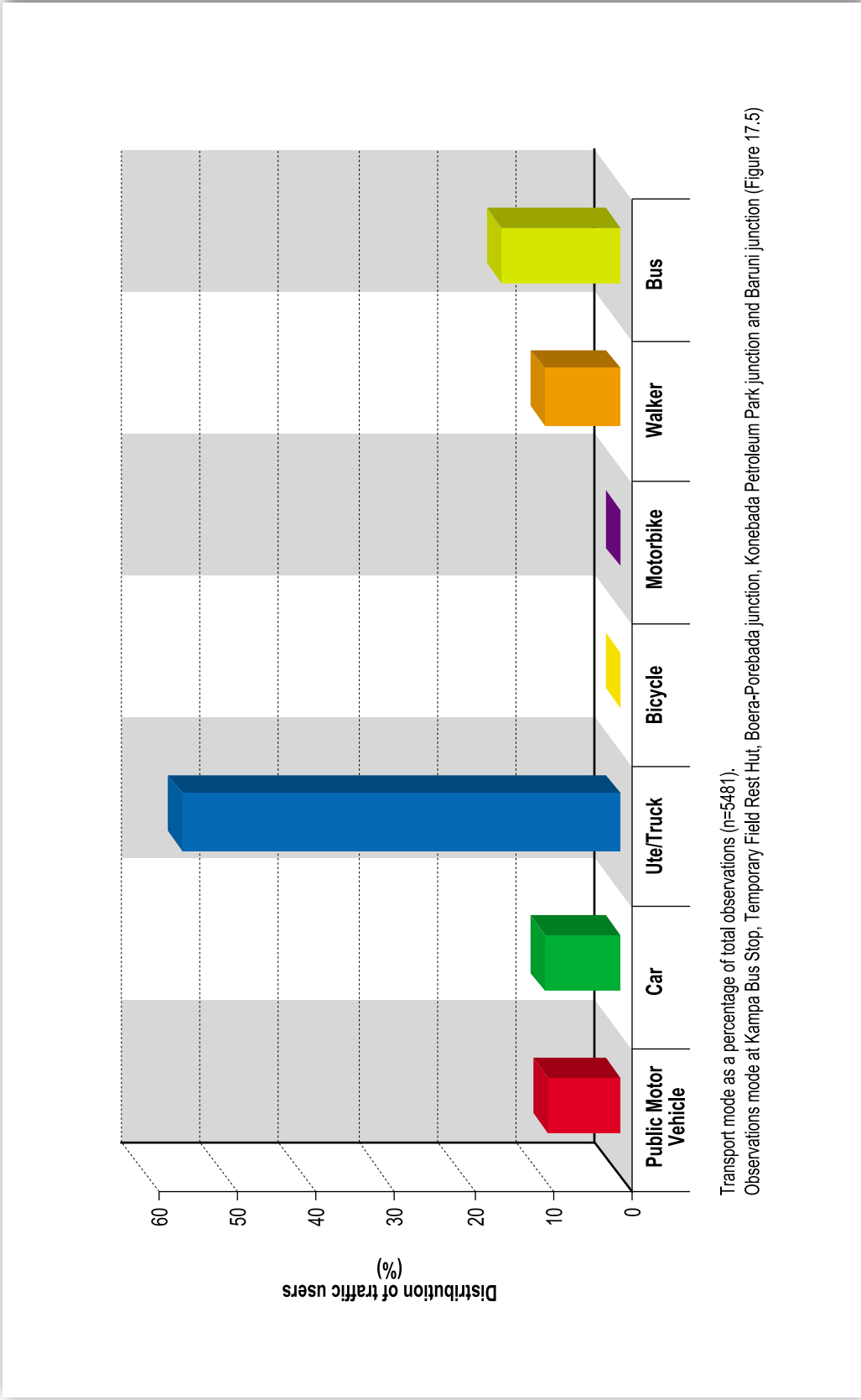
Figure 17.6 shows that the majority of the traffic movements are undertaken by utilities and trucks followed by buses, and then fairly evenly distributed between public motor vehicles, walkers and cars.

Over a seven-day period, almost 30,000 road users were recorded, of which some two-thirds were male.

17.10 Economic Activity

There were no landowner companies or landowner associations in the villages of the LNG Facilities site project impact area at the time of the SIA fieldwork. Most local business involves sales of firewood and fish, public motor vehicle operations and very small-scale enterprises that supplement subsistence life with sales of betel nut, sweets and cigarettes at small stalls. Women also sell fish, shellfish and excess garden produce, such as mangoes, in the market at Port Moresby. The SIA reports that:

it was acknowledged by many older women that the villagers do not have a ‘market’ mentality. ‘We don’t have an attitude of selling. It’s more consumption in the family’.



Transport mode as a percentage of total observations (n=5481).
 Observations made at Kampa Bus Stop, Temporary Field Rest Hut, Boera-Porebada junction, Konebada Petroleum Park junction and Baruni junction (Figure 17.5)

 Job No: 1284 File Name: 1284_09_F17.06_HB	Esso Highlands Limited		Percentage distribution of traffic users	Figure No: 17.6
	PNG LNG Project			

Women also make food dishes, such as *bougnas*, to sell to government departments in Port Moresby. Table 17.6 provides a summary of trade stalls located in the villages of the LNG Facilities site project impact area.

Table 17.6 LNG Facilities site project impact area villages trade stalls status summary

Villages	Gender of the Stall Operator	
	Female	Male
Porebada	29	24
Boera	17	2
Papa	14	2
Lea Lea	8	2
Baruni	9	2

In all, 109 trade stalls were recorded, confirming the findings of the road surveys that most trading is done either under houses or by the roadside, and by women (Plate 17.5).

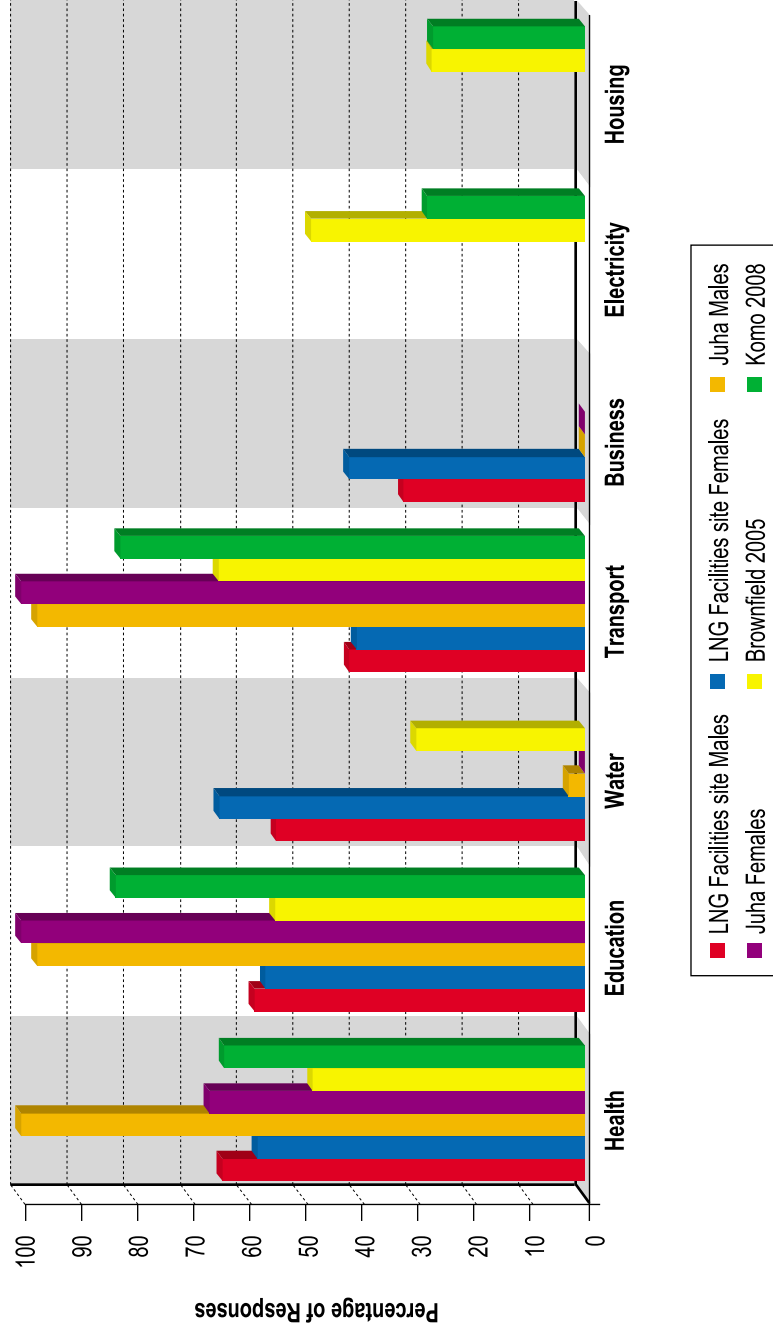
Table 17.7 provides some comparative results from the 2007 Household Survey, and it shows the level of income from employment in the LNG Facilities site project impact area was far less than one might have expected although clearly greater than in comparable upstream areas. Overall, respondents in the vicinity of the proposed LNG Facilities site indicated to the SIA researchers that unemployment was high. It seems to be the case that these LNG Facilities site communities – especially Porebada – have swelled in size with no consequent increase in employment.

Table 17.7 SIA baseline comparison for stated income sources (1997–2008)

Income Source	Community or Area (SIA Baseline Year)				
	Kutubu (1998)*	Kutubu (2001*)	Juha (2007)*	Komo (2008)*	LNG Facilities (2008)*
Employment	14.5	8.9	15.8	13.6	24.5
Royalties	83.1	55.8	13.1	16.0	2.1
Business	20.5	15.4	0	8.8	25.8
Cash crops	22.9	16.3	2.6	20.8	7.3
Livestock	19.3	9.3	5.2	30.4	9.8

*Numbers reflect the percentage of respondents reporting income from specific sources.

Figure 17.7 illustrates the communal benefits wish-list provided by respondents to the SIA Household Survey G10 question ('What communal benefits would you like to see from the PNG LNG Project?'). Villagers in the vicinity of the proposed LNG Facilities site are concerned with their water crisis, and females are more concerned about water than are males. Equally marked was the number of females expressing their wish for more business opportunities. These desires were repeated to company representatives during the Project Community Awareness and Mitigation Roadshow in November and December 2008.



17.11 Government and Governance

The proposed LNG Facilities site is located in Kairuku–Hiri District, which, with Abau, Goilala and Rigo, is one of the four districts of Central Province. The nearby city of Port Moresby and its surrounds are part of the National Capital District.

The villages of Boera, Papa, Lea Lea and Porebada are represented by four of the 18 ward councillors of the Hiri Rural Local-Level Government, in the Kairuku–Hiri District, which has its office in the Sir Hubert Murray Stadium in Port Moresby. The Hiri Rural Local-Level Government has six staff and an annual budget in the vicinity of K300,000. After payments to staff and council members, the Hiri Rural Local-Level Government has a budget for development activities of approximately K100,000, to be distributed among its 18 wards.

Recent legislation has established a Konebada Petroleum Park Authority in the vicinity of the proposed LNG Facilities site. The full implications of this act have yet to be widely understood, but the Konebada Petroleum Park Authority will have a mandate to impact community life through the establishment of social and/or development infrastructure and governance. A police station has been erected along the Portion 152 road junction, and it understood there are plans to establish a regular market at this site.

Much of the daily governance of the villages involves the local church which is central to the social lives of the community. Church tithes (*bobo*) often take precedence over school fees. The church is both a meeting hall and the centre of village life.