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Esso Highlands Limited



Papua New Guinea LNG Project

**Omati River Right-of-Way  
Communal Resource Plan**

PGHU-EH-SPZZZ-700002

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## ACRONYMS

Acronym	Definition
CAA	Clan Agency Agreement
CRP	Communal Resource Plan
DEC	Department of Environment and Conservation
DPE	Department of Petroleum and Energy
EHL	Esso Highlands Limited
ELC	Environmental Law Centre
FOC	Fiber Optics Cable
ha	Hectare
IFC	International Finance Corporation
IPCA	In-Principle Compensation Agreement
kg	Kilogram
km	Kilometer
KP	Kilometer Point
L&CA	Land & Community Affairs
LAT	Lowest Astronomical Tide
LNG	Liquefied Natural Gas
m	Meter
M&E	Monitoring and Evaluation
O&GA	Oil and Gas Act
PAP	Project Affected People
PGK	Papua New Guinea Kina
PNG	Papua New Guinea
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PS	Performance Standard
ROW	Right of Way
RPF	Resettlement Policy Framework
SIA	Social Impact Assessment
SMLI	Social Mapping and Landowner Identification
SMPs	Social Management Plans
TOP	Top of Pipe
VLO	Village Liaison Officer

## **EXECUTIVE SUMMARY**

### **Introduction**

This Communal Resource Plan focuses on economic displacement to fishing villages along the Omati River right of way. No physical resettlement will be required from laying the underwater gas pipeline and fiber optics cable along the Omati River for this part of the Papua New Guinea Liquefied Natural Gas Project.

This plan focuses on fishing communities, specifically the villages of Ai'dio, Bisi, Dopima, Goare, Kerewo and Mubagowo, between the Omati River landfall and a point 26 KP south at the mouth of the Omati River and the Gulf of Papua. Surveys have been conducted to confirm usages described and prepare this Plan. Monitoring and evaluation will continue as per the Project's Resettlement Policy Framework (Rev. 3, Nov 2010).

### **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 restore their livelihoods and standards of living. This plan is consistent with goals, principles, and processes described in the Resettlement Policy Framework.

### **Institutional and Legal Framework**

The process complies with legal requirements and criteria such as the Papua New Guinea Oil and Gas Act, key national government institution guidelines, legislation governing both provincial and local governments, and the International Finance Corporation's Performance Standards on Social and Environmental Sustainability.

To address compensation for the impacted clans in the Omati Waterways area because of offshore pipeline construction, Esso Highlands Limited worked with the Department of Petroleum and Energy to determine a plan for fair and just compensation based on the underlying compensation principles of the Oil and Gas Act. Viewing the waterways similar to land, a complete compensation package was developed.

### **Omati Right-of-Way Fisheries**

Potentially affected Kerewo fishing villages along the Omati River right-of-way include the villages of Ai'dio, Bisi, Dopima, Goare, Kerewo and Mubagowo. The villagers are a predominantly fish-sago gatherer society whose subsistence livelihood is dependent on natural sources. The staple diet is sago and fish including prawns, shellfish and mud-crabs.

The Omati River, downstream of the pipeline landfall, is a pristine estuary and supports the entire community's livelihood. Subsistence fishing is a daily activity, and sago is made every 2-3 days. Fishing is conducted at the village edge or along clan owned fishing camps downstream of the Omati landfall.

Each household owns a canoe used for travelling, fishing, collecting firewood and transporting sago logs. They range from 2-18 m and are constructed from local timber.

Sago palms are planted or grow along waterways as natural stands. Men transport the logs back to the village where women pound the palm pith and wash out the sago starch into holding containers made of sago palm branches. The waterway provides the source of freshwater for making sago, washing and drinking.

The subsistence fishery is healthy with an average fish catch of 15.8 kilograms per fisher per day and an average of 2.4 kilograms of mud-crabs per fisher per day. All sizes of fish and mud-crabs are available.

Traditional bows and arrows, scoop baskets, modern monofilament, and multifilament gillnets are used for fishing. Gillnets mesh sizes range from 3-5.5 inches.

The main types of fish consumed are threadfin salmon, barramundi, mullets, eel-tail catfish, forktail catfish, lantern fish, penaeid prawns and mud-crabs. Threadfin salmon is the main species used at 38% by total weight of the catch. Barramundi is 25% and eel-tail catfish is 13% of total catch.

Women normally collect mud-crabs and shellfish in the mangrove forests along the estuary. Men, women and children carry out fishing activities. The entire catch is consumed at home and, where opportunities for sale arise, sold locally. Smoked fish and prawns are sold at Kikori Station by families travelling into Kikori.

Fishing occurs year round. Large mammals and reptiles are found in the estuary. Fish and prawn breeding habitats are known locally and are distinguished by the mangrove *Avicennia marina*. These distinctively grow along depositional banks.

Transiting vessels into and out of the Omati Estuary include logging barges, container vessels, dinghies and canoes. Logging barges travel out of the passage at the landfall site into the Omati River. Aumu Passage, the channel next to Goare village, is the alternate route during construction.

### **Consultation and Disclosure**

The Project's Land & Community Affairs team holds regular stakeholder engagement meetings with the affected communities. Through October 2011, 17 meetings have been held. During meetings, topics of interest are raised and current project activities discussed. Community concerns are addressed, issues identified, and information on use of the Project's Grievance Process reiterated.

The CRP disclosure meetings were conducted between August 25 and September 10, 2011, with 9 engagements held. Disclosure activities were conducted by members of the Project's Land and Community Affairs team, stakeholder engagement team, fisheries team, and Environmental Law Centre. Documents disclosed include public dissemination/distribution of this CRP document.

### **Project Impacts**

During pipeline construction, there will be an exclusion zone around the pipelay barge and dredging vessels for five months between October 2011 and February 2012; however, communities will be able to pass the construction vessels to travel along the Omati River to access other fishing camps and Kikori.

During the shore pull in early January 2012, the A'a passage near the Omati landfall may be blocked, but this will be between 3-4 days. As this is the only route from the Omati River to the market, schools, and villages in Kikori for people living in Omati, Goare, Ai'dio, Dopima, Kemei, and Mubagowo, communities will be escorted around the pipelay vessels or allowed to pass through when and where it is safe to do so.

Impacts during the fiber optic cable installation is expected to be minimal given the size of the vessel (smaller than both dredging and pipelay vessels) and length of time in the river.

Environmental studies undertaken on the impacts of dredging in the Omati River indicate minimal impacts to the river.

## **Eligibility and Entitlements**

The Project will address temporary economic displacement in accordance with IFC Performance Standard 5 and the RPF. The Project is required to mitigate social impacts and economic displacement because of construction activities. At this time, economic displacement impacts are expected to be minor, localized, and short in duration in terms of their effects on any given settlement due to the limited exclusion from the waterways and abundance of fishery resources and habitats.

The main foreseeable impact is one of safety and inconvenience to people's normal activities due to the required exclusion zone around the dredging and support vessels when in operation. With adequate advanced notice about construction activities provided to local waterways users, economic impacts can be avoided or minimized; however, if economic displacement is identified through monitoring activities or grievances, individual compensation along with community based assistance will be implemented as required.

## **Livelihood Restoration Program**

The Project will ensure it restores, if needed, impacted livelihoods in accordance the Project's Resettlement Policy Framework. Livelihoods are expected to be only temporarily impacted and limited to a small number of fishers during construction. No long term-economic impact is currently anticipated during operations.

## **Cultural Heritage**

The main sacred site is the channel locally called Aumoturi and interconnecting channels. Historically, warriors died there, fighting to maintain territory. A public meeting was held in August 2011 to agree on a satisfactory mitigation and appeasement for these deceased ancestors and to provide for their spiritual well-being.

On September 19, 2011, the Kerewo tribe and representatives from the PNG LNG Project came together to honor the tribe's ancestors who were renowned warriors and head hunters and who, in centuries past, had fought in tribal wars off Goaribari Island and in the Omati River. The ceremony included a sacred site declaration, traditional dancing and drama, a communal lunch prepared by the Kerewo tribe, a cultural declaration, and a devotion of prayer.

## **Grievance Management Framework**

A Project Grievance Process has been implemented to receive, respond and address any grievances made to the Project.

## **Organizational Roles and Responsibilities**

Overall responsibility for the planning, implementation, and monitoring of economic displacement rests with the Project as specified in the RPF. The Project's Land & Community Affairs team will undertake these activities.

## **Monitoring and Evaluation**

An L&CA Field Officer and a Village Liaison Office will be stationed on the Omati River for the duration of construction work to communicate with waterways users and monitor impacts. Both will live onboard the accommodation vessel and operate on the waterways by small boat.

Fisheries catches will also be monitored and evaluated on a quarterly basis during construction. This effort will provide information on whether corrective action may be needed to achieve Project goals.

## **Resettlement Implementation Schedule**

A schedule of tasks has been developed to plan and implement the major components of CRP implementation.

## **Cost and Budget Estimate**

Budget provision of approximately PGK 0.7 million is made for the life-of-the project.

## 1.0 INTRODUCTION

### 1.1 Project Area and Omati River Right-of-Way Villages

The Papua New Guinea Liquefied Natural Gas Project (PNG LNG Project) involves onshore and offshore pipeline gas transport from the Highlands to an LNG plant, sited on the Caution Bay shoreline. The 407 km offshore pipeline extends from a northern landfall in the Omati River to a southern landfall at the LNG plant site in Caution Bay, just north of the capital city of Port Moresby (Figure 1).

This Communal Resource Plan (CRP) focuses on the project-affected fishing villages of Ai'dio, Bisi, Dopima, Goare, Kerewo, and Mubagowo (Figure 2). They are located between the pipeline landfall and the junction of the mouth of the Omati River with the Gulf of Papua. Villages upstream of the landfall are not included in this CRP. There is no physical resettlement from laying the underwater gas pipeline and fiber optic cable (FOC) along this right of way (ROW). Surveys have been conducted to prepare this CRP and monitoring and evaluation will continue as per the Project's Resettlement Policy Framework (Rev. 3, November 2010).

The villages, primarily Kerewo, are predominantly a fish-sago gatherer society whose subsistence livelihood is dependent on natural sources. The staple diet is sago and fish. Each household owns a canoe used for travelling, fishing, collecting firewood, and transporting sago logs.

Sago palms are planted or grow along waterways as natural stands. Men transport the logs back to the village where women prepare the sago. The waterway provides the source of freshwater for making sago, washing and drinking.

Men, women and children carry out fishing activities year round. Fishing is conducted at the village edge or clan owned fishing camps downstream of the Omati Landfall. The subsistence fishery is healthy. The main types of fish consumed are threadfin salmon, barramundi, mullets, eeltail catfish, forktail catfish, lantern fish, penaeid prawns and mud-crabs.

The entire catch is consumed at home and, where opportunities for sale arise, sold locally. Smoked fish and prawns are sold at Kikori Station by families travelling into Kikori. Women normally collect mud-crabs and shellfish in the mangrove forests along the estuary.

Large mammals, such as dolphins, and reptiles, such as the Piku turtle (*Carettochelys insculpta*), are found in the estuary. Fish and prawn breeding habitats are known locally and are distinguished by the mangrove *Avicennia marina*.

Transiting vessels into and out of the Omati Estuary include logging barges, container vessels, dinghies and canoes. Logging barges travel out of A'a Passage, adjacent to the landfall site, to the Omati River. Aumu Passage, the channel next to Goare village, is the alternate route during construction.

### 1.2 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 restore their livelihoods and standards of living. This CRP is consistent with the goals, principles and processes set out in the Resettlement Policy Framework (RPF).

This CRP is limited to economic impacts associated with temporary exclusion zones while laying the underwater gas pipeline and fiber optics cable in the Omati River Estuary. Should other unanticipated impacts occur, this CRP would be amended commensurate with the scale and complexity of the impacts.

### 1.3 Sources of Information and Compliance Protocols

Key sources for compilation of this CRP include:

- PNG Oil and Gas Act (1998/2001);
- PNG National Fisheries Act of 1998;
- International Finance Corporation's Performance Standards on Social & Environmental Sustainability – April 30, 2006;
  - PS 1 – Social and Environmental Assessment and Management Systems;
  - PS 4 – Community Health, Safety and Security;
  - PS 5 – Land Acquisition and Involuntary Resettlement;
  - PS 7 – Indigenous People;
- Social Impact Statement, Appendix 26, PNG LNG Environmental Impact Statement (Coffey Natural Systems CR\_1284\_9, January 2009);
- PNG LNG Project Resettlement Policy Framework (2010, PGGP-EH-SPENV-000018-030);
- Baseline Surveys on Waterway Traffic, Waterway Use and Subsistence Fisheries of the Omati River Estuary, Downstream of the LNG Landfall Site, 6 to 17 December 2010 (2011, PGHU-EH-SRZZZ-700002, February 2011);
- Resource Use Survey of the Omati-Kikori Delta (Coffey Natural Systems, CR 1284\_11-v1, December 2008); and
- Fiber Optic Cable Environmental & Social Impact Assessment (2011, PGGP-EH-SRENV-000012).

This CRP is compliant with Lender's Environmental and Social Requirements.

## **2.0 PROJECT DESCRIPTION**

### **2.1 Introduction**

The PNG LNG Project involves onshore and offshore pipeline gas transport from the Highlands to an LNG plant, sited on the Caution Bay shoreline. The 407 kilometer offshore pipeline will be buried 1.0 meter below the Omati riverbed and Gulf of Papua seabed from the Omati landfall until KP 52. It is then laid on top of the Gulf of Papua seabed until a point 3 kilometers from the LNG terminal. The pipeline will again be buried 1.0 meter below the seabed (2.5 meters below the shipping lane) until exiting at the LNG landfall.

This CRP covers economic impacts to artisanal fisheries potentially affected by construction and operations. Construction includes:

- Dredging 14 kilometers of the Omati River and trenching from KP 0 to KP 52;
- Omati landfall preparation work;
- Pipeline construction from the Omati landfall to KP 70 in the Gulf of Papua;
- Pipeline pre-commissioning; and
- Fiber optic cable installation.

The pipeline is described in the Project's PNG LNG Environmental impact Statement (2009); and Fiber Optic Cable, Environmental and Social Impact Assessment (2011). The scopes of work are illustrated in Figures 1 and 3.

### **2.2 Schedule**

The Project's offshore pipeline construction activities started in October 2011 in the Omati.

**Table 1: Construction Schedule – Omati River**

<b>Construction Activity</b>	<b>Start Date</b>	<b>End Date</b>
Omati landfall preparation (civil works)	1 October 2011	31 December 2011
Dredging and trenching	1 October 2011	31 December 2011
Offshore pipeline construction	1 January 2012	11 March 2012
Fiber optic cable installation – Omati River	1 March 2012*	31 March 2012*
Pipeline Pre-commissioning (flooding, dewatering)	29 March 2012	20 May 2012
Omati landfall tie-in and reinstatement	17 June 2012	23 July 2012

\* Start and end dates to be confirmed after contract award.

### **2.3 Offshore Pipeline Construction**

Offshore pipeline construction began in October 2011 in the Omati River. The first phase involved dredging 14 kilometers of the Omati River to create the access channel and pipe trench.

The access channel extends from KP 0.5 to KP 26.7 and will be up to 56 meters wide with a depth of either 2 meters LAT for the cargo barges or 3 meters LAT for the pipelay barge. The pipe trench will extend from KP 0.2 to KP 52 and will have a bottom width of 4.0 meters with sloping sides. The depth of the trench varies according to the required minimum top of pipe (TOP) depth of 1.5 meters at KP 24. A cross-section of the proposed channel is illustrated in Figure 4.

Two trailing suction hopper dredgers and a backhoe dredger will conduct this activity placing the spoil back into the river.

Civil work to build a cofferdam and onshore trench will begin at the Omati landfall in October 2011 and be complete at the end of December 2011.

In January 2012, a shallow pipe lay barge will lay the pipeline from the Omati landfall to KP 63 in the Gulf of Papua. It will take approximately 40 days to lay the pipeline in the Omati River. Cargo barges will travel from Pai'a Inlet in the Gulf to supply the pipelay barge with pipeline.

Dredging, pre-trenching, and pipeline construction in the river will be continuous, 24 hours a day, 7 days a week.

Pipeline pre-commissioning (flooding, cleaning and gauging, and the hydro test) will take place from March 29 through May 20, 2012. Once the tie-in is complete at the Omati landfall, re-vegetation will take place in October 2012.

During construction in the Omati River, there will be a number of smaller supply vessels supporting operations, two anchor handling tugs, and two accommodation vessels to house workers.

## **2.4 Fiber Optic Cable**

The offshore fiber optic cable will be installed within the pipeline trench in the Omati River immediately after the pipeline is laid and take about 30 days. It will be laid by a vessel smaller than the dredging or pipelay vessels.

## **2.5 Exclusion Zones**

### **2.5.1 Pipeline Construction**

During pipeline construction there will be an exclusion zone of 500 meters around dredging vessels and a 1,600 meter x 730 meter moving exclusion zone or "box" around the pipelay barge (Castro 10 or similar vessel). These exclusion zones will be in effect between October 2011 and February 2012 during pipeline construction.

The pipelay barge, with the larger exclusion zone, will be operating in the area for only 40 days beginning in January 2012 and will gradually move up the river each day. The pipelay vessel, although small, has an extensive anchor and pulley system which extends 1,600 meters up/down stream and 730 meters across the width of the river. After the pipe is laid, the anchors are pulled, and the pipelay barge moved upstream. The pipelay vessels travels at 3-5 knots when working, and it is planned that the shallow water anchors will be moved twice a day during high tide.

During pipeline construction, the exclusion zone assists in keeping the communities safe around the pipelay barge and dredging vessels. Communities will be able to pass the construction vessels to travel along the Omati River to access other fishing camps and Kikori. The Project's L&CA team, including the village liaison officer who is from Goare village, will be permanently stationed in the river to keep communities outside of the exclusion zone and assist them to travel past safely.

### **2.5.2 Fiber Optic Cable Installation**

A fiber optics cable will be buried in the river bed adjacent to the pipeline in March 2012. The installation exclusion zone is not yet determined but is expected to be minimal as the vessel is smaller than both the dredging vessel (exclusion zone 500 meters) and pipelay barge (exclusion zone 1600 meter x 730 meter).

### 3.0 INSTITUTIONAL AND LEGAL FRAMEWORK

The resource planning process complies with legal requirements and criteria, such as those specified in the PNG Oil & Gas Act (O&GA), various key PNG national government institution guidelines, legislation governing both provincial and local governments, and the International Finance Corporation's (IFC) Performance Standards on Social and Environmental Sustainability.<sup>1</sup>

The principal PNG legislations relating to land and compensation are the 1996 Land Act and O&GA 1998. PNG has no formal resettlement policies or statutes nor specific requirements for compensation related to use of customary fisheries or waterways.

#### 3.1 Compensation as per the Oil and Gas Act

Per section 118(2)(a) the O&GA, compensation shall be paid for deprivation of the use and enjoyment of the surface of the land, except where there has been a reservation in favor of the State of the right to such use and enjoyment, as in the case of a State Lease.

The O&GA addresses compensation for land use and damages to the surface of the land; however, it does not address deprivation of the use and enjoyment of waterways. Additionally, there is no precedent in PNG for waterways compensation.

To address compensation for the impacted clans in the Omati Waterways area due to offshore pipeline construction, EHL worked with the Department of Petroleum and Energy (DPE) to determine a plan for fair and just compensation based on the underlying compensation principles of the O&GA. Viewing the waterways similar to land, a complete compensation package was developed.

#### 3.2 Compensation Plan

##### 3.2.1 Categories of Compensation

EHL in accordance with the general principles of compensation in the O&GA and a letter of understanding with the DPE has agreed to compensate the people of the Omati Waterways under the following categories of compensation:

- Compensation for the deprivation of use and enjoyment of the Omati Waterways by the Project for purposes of constructing the offshore pipeline;
- Compensation for initial damage to naturally occurring vegetation, birds, animals and fish;
- Compensation for known and unknown consequential impacts (e.g., discoloration of water/treated water discharge, potential disturbances to ancestral burial grounds); and
- Compensation that may be required under principles of equity and fair dealing.

As under the O&GA, compensation payments were made to the impacted clans. A fair compensation package was formulated for the clans identified in the Omati Waterways area, and these clans have been compensated per the In-Principle Compensation Agreement (IPCA) and Clan Agency Agreement (CAA) for this area.

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<sup>1</sup> Further details are available in Section 2 of the Esso Highlands Limited PNG LNG Project Komo Airstrip Resettlement Action Plan, November 2009 (revised November 2010).

### 3.2.2 Execution of IPCA and Clan Identification

L&CA Officers along with Village Liaison Officers for the Omati Waterways areas worked to identify the project affected people (PAP) in this area for the last two years through various meeting with village leaders along the offshore pipeline ROW.<sup>2</sup> Representative members from over 120 sub clans were identified to represent their people in the execution of the IPCA and CAA. The final documents were executed in Kikori on July 4, 2011, with 118 signatories endorsing 14 clan agents covering 10 named land areas.

A single CAA was executed for the Omati Waterway which is not typical. Normal practice is to enter into CAAs with each clan determined to have ownership rights to the area. An area will be demarcated by the L&CA officers working with the clan leaders for the area. This demarcation determines the distribution of compensation between clans. Because of the displacement of the Kerewo people from the Omati area resulting from the murder of missionary James Chalmers and subsequent punishment to the people, the clan structure in the area is much fractured with each named land portion linked to various clan names. During L&CA's work with the PAP, the people requested that one agreement be signed.

The CAA was executed designating 14 clan agents who represented 10 geographic areas along the Omati River. These agents formed an Omati Waterways Committee that met approximately five times to determine how to divide compensation. At these meetings, it was decided to include additional villages that had a history of using the waterways. At the time of the payment, this committee of Clan Agents had identified 14 different villages to receive compensation. Nine of these villages were designated main affected villages with 5 additional villages around the offshore pipeline also receiving compensation in respect of their traditional and current use of the waterways. In addition to the Kerewo Tribe, three other tribes/ethnic groups were compensated: Omati Gihiteri, Morigi, and Kibiri.

Table 2: Compensation for Kerewo Tribe – Villages and Sub clans

Classes		Villages/ Agents	Tribe/ Ethnic Group	Number Subclans Represented by IPCA Signatories	Number of Subclans per Cash Distribution Plan provided by Clan Agents
MAIN Impacted villages along Pipeline ROW	1	Bisi / Paia	Kerewo	28	16
	2	Bisi / Nagoro	Kerewo		10
	3	Ai'idio	Kerewo	9	19
	4	Mubagowo	Kerewo	12	16
	5	Goare	Kerewo	9	9
	6	Dopima	Kerewo	14	17
	7	Kemei	Kerewo	8	8
	8	Kerewo Origin	Kerewo	10	12
	9	Goro/Babaguina	Kerewo	17	18
Affected villages around the Pipeline ROW	1	Omati	Omati Gihiteri	3	10
	2	Morigi	Morigi	0	1 (to be divided by agents)
	3	Samoa	Kerewo	11	16
	4	Aimahe	Kerewo/Kibiri	1	6 +

<sup>2</sup> The Omati Waterways was included in the PNG Gas Project Full-Scale SMLI Kaiam-Kopi-Omati-Goaribari Gas Pipeline Route. Prof James Weiner – May 2006. This included all communities within 5 km on either side of propose pipeline. Followed Goldman & Tauka 1998 study and accepted by DPE as compliant with O&GA sect. 47.

Classes		Villages/ Agents	Tribe/ Ethnic Group	Number Subclans Represented by IPCA Signatories	Number of Subclans per Cash Distribution Plan provided by Clan Agents
	5	Apeawa / Babai	Kerewo	3	5
<b>Total Villages</b>	<b>14</b>	<b>Total Subclans</b>	<b>Total Subclans</b>	<b>125</b>	<b>163</b>

As there were neither known disputed ownership issues nor court actions that would impact compensation for the waterways, compensation was paid based on the distribution received by the Clan Agents.

### **3.3 Compensation Categories per the In Principal Compensation Agreement**

#### **3.3.1 Compensation for the Deprivation of Use and Enjoyment of the Omati River by the Project for Purposes of Constructing a Pipeline**

In compliance with Section 118(2) (a) of the O&GA, the Project made a one-time payment of a sum equal to K321 per ha for the respective surface area of water from which the PAP will be partially/temporarily excluded during construction. This compensation recognizes that PAP will not be able to fully use the Omati River for traditional and customary purposes during Project operations.

The Omati people requested to be compensated in the same method as landowners, namely by area. The area considered for the deprivation payment is deduced from the largest exclusion zone required during construction of the offshore pipeline. This zone is relevant because it defines the maximum area from which the Omati people would be deprived at any one time. At its widest, it is 730 meters which is the exclusion width required by the pipelaying barge. The 26 kilometer length is the length of the Omati River between landfall and a point about 2 kilometers from Goare village in the Gulf of Papua. Omati canoes cannot navigate beyond this point in the Gulf, and no dredging will take place beyond this point. Based on these dimensions of the exclusion zone, the compensation area was calculated as 1940 hectares.

The pipelaying barge will be working in the Omati area for approximately four months and will be moving up the channel over that time. No single area will experience a lengthy exclusion period as the barge will spend no more than half a day at a particular spot.

The compensation rate was deduced from an IPCA signed by the Kerewo Tribe for the onshore pipeline at the Omati Land Fall and aligns with precedent for land compensation in the region.

Total deprivation compensation is PGK 622,740, which was paid to Kerewo tribe, its various clans and sub clans, along with other tribe/clans with historic and current access/ownership rights to the impacted area.

#### **3.3.2 Compensation for Initial Damage to Naturally occurring Bush, Vegetation, Birds, Animals or Fish**

The Project will make a single payment to the Landowner(s) for any damage on their land to the natural bush, birds, and fish which results from Project construction in compliance with Section 118(2)(b) of the O&GA.

This is individual compensation that will be paid to the owner of the item/tree damaged.

### 3.3.3 Compensation for Unknown Consequential Damages Caused by Project Construction of a Pipeline

In compliance with Section 118(2) (e) of the O&GA, the Project will monitor and report for a period of one year the impact of Project operations on the Omati River and follow up with the clan on the results of such reports for further compensation if warranted.

If the consequential damage is to items “owned” by an individual, the compensation will be paid to the individual. Where the consequential damage is broader and impacts an entire community, compensation will be paid to the impacted clan/community through clan representatives/agents.

### **3.4 Economic Displacement under the Resettlement Policy Framework**

The Project will address temporary economic displacement in accordance with the RPF. Mitigation of social impacts related to construction is addressed in the Project’s Social Management Plans (SMPs).

At this time, economic displacement impacts are expected to be minor, localized and short in duration in terms of their effects on any given settlement due to the limited exclusion from the waterways and abundance of fishery resources and habitats. Fish habitats and fishery resources are extensive in the Omati/ Kikori deltaic and unlikely to be adversely affected. Currently, fishing within the main channels of large rivers and barging routes is limited as primary fishing methods are set gill nets and spears. Most nets and lines are set at eddies along banks, at the confluence with smaller tributaries, and within the smaller creeks.

The main foreseeable impact is one of safety and inconvenience to people’s normal activities due to the required exclusion around the dredging and support vessels when in operation.

The compensation plan addressed above does allow for compensation for known and unknown consequential damages. If economic displacement is identified through monitoring activities or grievances, individual compensation along with community based assistance will be implemented as required.

An L&CA field officer and a village liaison officer (VLO) will be stationed on the Omati River for the duration of construction work. Both will live onboard the accommodation vessel and operate on the waterways by small boat. Their roles and responsibilities are outlined in Section 6.4.

### **3.5 Omati Budget and Payment**

Approximately K 623,000 has been allocated for compensation to the clan for deprivation to the waterway. EHL will also address individual claims for compensation and unforeseen consequential damages to the water and fishing livelihood. The IPCA and Authority to Pay along with the CAA were executed on July 4, 2011. Compensation was paid to 14 agents in 4 village locations (Omati, Bisi, Babaguna, and Goare) on October 12-13, 2011, which coincided with the October start of construction in the area. As of November 1, 2011, no issue with the payments or distribution of the payments has arisen.

## **4.0 OMATI RIGHT-OF-WAY FISHERIES**

### **4.1 Introduction**

The villages along the construction ROW in the Omati River include Ai'dio, Bisi, Dopima, Goare, Kerewo, and Mubagowo. Locally, the channel from the Omati landfall site to Goaribari Island is called Aumoturi. At the northern end of Goaribari Island, the channel going out towards Dopima village is called Omati Turi, and the other channel going past Goare village is called Hiamoturo.

The entire waterway, from the landfall site and along the pipeline route to Goare village on Goaribari Island, is used daily by local people, primarily Kerewo. The waterway is their source of drinking water and also supplies sago, fish, mud-crabs, shellfish and prawns. Sago and fish is the staple diet. Each household owns a canoe used for traveling, fishing, collecting firewood, and transporting sago logs.

Villagers' livelihoods are entirely dependent on the waterway. Low population density and low natural disturbance have allowed the Omati Estuary to stay in a state of natural balance. Along the waterway, large stands of nypa palms, mangroves, black palm, okari, bamboos, and forest trees for making canoes and building houses are in abundant supply. These are easily accessed along the main river channel and other interconnected channels to the main channel.

Nypa (*nypa fruticans*) is available all year round. Nypa leaf is used for house thatch, making baskets to store sago, food wrap for cooking sago and fish, and as plates for serving food. Young nypa frond makes excellent tie rope for tying mud-crabs.

The Omati Estuary is interconnected with all other adjacent waterways of the Turama and Kikori River Deltas. Local traffic of canoes, dinghies, and vessels coming from the Western Province, within the Turama, or Kikori Rivers has been recorded. Other vessels from as far East as Kerema all go through various sheltered waterways associated with the Omati River delta area. Large commercial vessels going through the Omati River are logging and container barges that are recorded as traffic.

### **4.2 Household Use**

Two surveys have been completed and included information collection on fishing, gardening, making sago, taking children to school, and taking food to the local market for sale. Other subsistence information, such as sources of drinking water, sites for processing sago, fishing camps, areas for felling sago, sacred sites and number of canoes for each family, were recorded.

During the first survey in late 2010, 37 households were interviewed from Goare, Dopima, Ai'dio, Kemei, Kerewo, Mubagowo, and Bisi. The numbers of households interviewed were low as most people were away at Kikori largely to maintain school-going children.

Families make regular trips to Kikori and supply smoked fish and sago for sale and for consumption. At Kikori Town, families access town markets and school facilities. The only school outside of Kikori is at Bisi village with grades 3-4. It is estimated about 1,500 people live in these Kerewo villages.

Each household's livelihood is waterway dependent. Kerewo communities rely on canoes as their only means of transport. They use the waterway daily for fishing, making sago, and floating sago palms and black palms to their villages. Each family has an all-purpose canoe, be it for fishing or for transporting sago. A number of subsistence activities are undertaken in a single trip, including fishing, collecting firewood, or cutting sago to transport home.

Canoes are made from three forest trees that grow along the waterways. *Terminalia* spp., an Okari tree, is one of the species used. The survey of local vessels showed canoe sizes ranged from 2-18 m.

Villagers in Ai'dio, Goare, Dopima, Kerewo, and Mubagowo have no gardens; whereas, Bisi villagers have a few scattered gardens.

#### **4.3 Traditional Ecological Knowledge**

This survey recorded sacred sites, fishing seasons, and local ecological knowledge including occurrence and/or sightings of dolphins or other large mammals along the river.

Fishing is year round. Fish and prawn feeding and nursery habitats have been recorded downstream of landfall. These areas are characterized by a distinct mangrove species, *Avicennia marina*, which is a light green colored mangrove. Roots and trunks of this mangrove that is regularly submerged have extensive growths of brown algae making them look black. Barramundi and other fish feed on fish and bivalves growing there.

The seasonal occurrence of all food fish species and other estuarine wildlife is well-known and passed on as oral knowledge.

#### **4.4 Subsistence Fisheries**

Subsistence fishing information was recorded for each household and included individual information, types and sizes of fish caught, and fishing effort. In the December 2010 survey, 285 kilograms of fish and 32 kilograms of mud-crabs were weighed. The catch rate for fish was 15.8 kilograms per fisher per day with a range of 1.6-52.4 kilograms per fisher per day; mud-crabs were 2.5 kilograms per day.

Fish catch was also measured in August/September 2011 over a 16 day period at five locations. Total fish catch was recorded at 590.5 kilograms or only 37 kilograms per day. Because fishers were preparing for the Goare ceremony (see Section 4.7), total fish catch was down over this period from previous surveys.

The main types of fish caught are Threadfin Salmon (*Polydactylus sheridani*), Barramundi (*Lates calcarifer*), Eeltail Catfish (*Arius* sp.), Forktail Catfish (*Arius* sp.), Blue Salmon (*Polydactylus* spp.), Sharks, Mud-crabs (*Scylla serrata*) and Penaeid prawns (*Penaeus* and *Metaperaeus* spp.). Normally the entire catch is used for home consumption except when the opportunity to sell fish arises. The selling price for fish is between PGK 3-8 per kilogram based on type of fish and purchaser.

The main fishing gear used for fish are gillnets, locally known as Poho. Other traditional fishing gear includes bows and arrows, hand-held spears, and scoop nets, which are used by women to catch prawns and small fish.

Mud-crabs abound in the mangrove areas and women gather these and shellfish by hand. When collecting juvenile prawns, hand-held scoop baskets were used. Overall, it appears that subsistence fisheries are healthy.

#### **4.5 Fishing Camps**

Fishing camps are used by households and individuals to produce enough smoked fish, crabs and prawns to last over several days. At the camps, canoes are used to set out in any one direction to a known fishing spot to set nets and/or hand collect mud-crabs and shellfish. Fish, prawns and crabs are wrapped in nypa leaf, bamboo, and/or sliced mangrove roots of the mangrove *Rhizophora stylosa* and smoked.

While at fishing camps, other activities, such as cutting black palm or cedar mangrove that are house building materials or collecting firewood, are done to maximize "fisher/gather" activities before returning home. Smoked fish products are consumed at home or taken by canoes by families traveling into Kikori station, and sold.

Fishing camps for the villagers of Bisi, Goare, Ai'dio, Dopima, and Mubagowo are downstream of landfall. Bisi village is in a channel upstream of landfall so access to fishing camps will be a consideration during construction. The fishing camps of the Omati clans are located upstream, except one downstream of landfall.

#### **4.6 Waterway Traffic**

River traffic was monitored along the right-of-way at locations where construction will occur in December 2010, July 2011, and August/September 2011. A daily log of pictures of canoes, vessels and other important waterway activity passing the observation site was kept for collation by the fisheries team.

Connecting channels into the Omati that may be affected during construction were investigated. The fisheries team used a dinghy and traveled along the channels to check if the channels were accessible and open for use by local people.

Two main types of vessels were recorded. The first were local canoes used by Ai'dio, Bisi, Dopima, Goare, and Kemei for day-to-day activities. Local people stand or sit in the canoes and use long wooden paddles to move the canoes along from one location to another.

From the December 2010 survey, a total of 98 canoes were recorded as passing the four observation sites in the survey period. This indicated that any number of local canoes might be travelling along the pipeline route daily. Observations at the landfall site indicated Bisi village canoes travel into A'abari Passage and out at the landfall to reach their fishing camps downstream of the landfall. Previously Bisi village was located at Nagoro, downstream of landfall; however, the village moved to its present location in the early 1970s due to an eroding riverbank.

People travel along the waterways anytime of the day or evening depending on their need. Long distance travel in and around the Omati Estuary is usually timed with the incoming and outgoing tides. For example, people at Goare will time their travel on the incoming high tide to get from Goare up to the landfall site. Likewise, people upstream will travel downstream with the outgoing low tide. During travel, most canoes are camouflaged against the banks of the river. This feature is an important safety consideration for construction vessels.

The second type recorded is transit vessels such as logging barges, container vessels, dinghies, and canoes from other waterways. Logging barges travel out past the landfall to and from the upper Omati River and back to Kikori. Container barges travel out of the Omati Estuary past Goare village.

During the August/September 2011 survey, there was a substantial increase in movement along the Omati River in preparation for the Goare ceremony scheduled for mid-September (See Section 4.7). People from the Kerewo communities of Ai'dio, Bisi, Dopinma, and Mubagawo along with the people living in Kikori station traveled to Goare village to build shelters and prepare for the ceremony. At five observation sites over 16 days, 245 canoes and 150 dinghies were recorded; however, because of the ceremonial planning, this study data is not reflective of normal use.

#### **4.7 Sacred Sites**

The channel from Goaribari Island up to Omati landfall is called Aumo Turi. Channels around the island and adjacent waterways are tribal fighting zones. The term Aumo is the male penis in Kerewo, and Turi is 'channel'. Many warriors died to protect the waterways and the term Aumo Turi signifies 'warriors', meaning men, died fighting. These interconnected channels are highly treasured by the local people because it was the burial ground of their ancestors. Goaribari Island is also the location where the first missionary was killed and eaten by the local people as part of ritual and where, in retaliation, British killed local people.

Although many of the ancestors' villages have now moved inland, the first, second, and third generation Kerewo warriors who lost their lives in territorial battles with neighboring tribes will always be remembered through the legends and tales passed down to their children, grandchildren, and great-grandchildren. When a warrior was killed during battle on the open sea or rivers, they were placed overboard to ensure their deceased bodies did not return home to their relatives or family. It is believed the ancestral bodies and spirits remain in the water to this day. Traditional ceremonies, based on tribal beliefs, are an important way to respect and honor the war heroes lost during battle.

A public meeting was held in August 2011 to agree on a satisfactory mitigation and appeasement for these deceased ancestors and to provide for their spiritual well-being. It was agreed that Project would provide funds for a traditional spirit ceremony to be held on Goaribari Island.

On September 19, 2011, the Kerewo tribe and representatives from the PNG LNG Project came together to honor the tribe's ancestors who were renowned warriors and head hunters, and who, in centuries past, had fought in tribal wars off Goaribari Island and in the Omati River.

The traditional ceremony was held prior to construction activities that started in October in the Omati River. This traditional ceremony, in particular, respects and honors the resting places of the ancestral bodies which could be disturbed by construction activities in the Omati River. The Kerewo people also saw the ceremony as an opportunity to create new beginnings and reunify their tribe. The ceremony included a sacred site declaration, traditional dancing and drama, a communal lunch prepared by the Kerewo tribe, a cultural declaration, and a devotion of prayer.

The ceremony was a great success with hundreds of tribal members and Project team members attending and participating in the service. Clan leaders were appreciative of the respect Project showed the Kerewo Tribe and their sacred sites.

## 5.0 CONSULTATION AND DISCLOSURE

### 5.1 Ongoing Stakeholder Engagement

First-round engagements for onshore and offshore (Omati River section) pipeline construction activities began in October 2010. These engagements took place in communities, schools and churches and provided residents with general information about the Project and pipeline construction activities. Information was also provided on future dredging and the 2011 trenching work in the Omati River. These meetings further provided a forum to address community issues and grievances.

Further rounds of stakeholder engagements were undertaken in June, July and August 2011 to provide information on:

- Update on the offshore pipeline construction activities and timing thereof;
- Reminder of waterways safety; and
- Introduction to the FOC installation as a part of offshore pipeline construction.

Additionally, the L&CA team holds regular stakeholder engagement meetings with Omati fishers. During the meetings, topics of interest are raised and current project activities discussed. Community concerns are addressed, issues identified, and information on use of the Project's Grievance Process reiterated.

**Table 3: Stakeholder Engagement Consultations for Offshore Construction Operations**

Village/Group Engaged	Dates	Activities	Questions/ Issues	# People
Kopi Camp VLO	22/10/2011	Offshore pipeline construction, waterways safety	Impacts of dust on road, business development opportunities, environmental impacts to fishing and water, project impact on culture.	8
Kikori Station	07/11/2010	Onshore/offshore pipeline construction, employment and environment	Project benefits, employment and training opportunities, business development opportunities, environmental impacts, safety and traffic, project impact on culture, livelihood impacts.	104
Kikori Women's Group	15/11/2010	Onshore/offshore pipeline construction	Environmental impacts on land and in river, use of onshore ROW and road, concerns that men spend salaries on alcohol, training & employment opportunities for women, business opportunities for women, request for health and education facilities.	30
Bisi Community	17/11/2010	Onshore/offshore pipeline construction, waterways safety, construction update, FOC disclosure, safety awareness	Compensation for trees and waterway, compensation for impacts to livelihoods, Oil search royalties, infrastructure – road, employment opportunities, request for school, royalty benefits.	49
	20/07/2011		No comments or questions reported. Community understood and received message well.	36
Goare Community	18/11/2010	Offshore pipeline construction, waterways safety	Compensation for livelihood impacts, Project emergency response, construction, employment opportunities, disturbance of ancestral graves in riverbed, construction impacts, frequency of communication.	36
Goare, Ai'dio,	08/06/2011	Offshore construction	Compensation for fiber optic cable, request for	38

Village/Group Engaged	Dates	Activities	Questions/ Issues	# People
Kemei		update, FOC, grievance process, safety awareness	community development project (water).	
Goare Community (in Kikori)	30/11/2010	Offshore pipeline construction	Requests for project information from other project partners, to establish project offices in Kikori/Omati and repeater station, royalty/equity payments, business opportunities, impacts to fishing/livelihoods, compensation, employment.	115
Omati Community	19/11/2010		Construction, royalty/equity benefits for non-PIA, request to provide transportation, environmental impacts, request for potable water, inclusion in waterways MOU, employment, importance of timely information, concerns on impacts to culture/ religion, logging Project royalty payments, project impact to Government post, scraper station name.	71
Ero and Samoa	03/12/2010		Social mapping of waterway landowners, business development grant distribution, impacts of gas leakage, training sponsorship, impacts to fish catch, impacts to river morphology, pipeline burial, environmental impacts – river pollution, employment.	53
Kikori High School	17/02/2011	Onshore/offshore construction, traffic safety	Employment opportunities, training opportunities, clarification of L&CA roles.	131
Catholic Church Kikori	03/03/2011		Impacts to fish from offshore pipeline, request for potable water, strategic community investment, water quality, project impact on teachers and schoolchildren.	37
Veraibari Community (women)	02/03/2011		Compensation, project workers abusing alcohol, request for community development projects.	71
Kerewo Leaders	10/06/2011	Offshore pipeline construction update, fiber optic cable, and waterways safety awareness	Recognition of offshore pipeline for royalty, equity benefits, compensation payments, benefits of and compensation for fiber optic cable.	8
Omati villagers (at Kopi)	17/06/2011		Environmental impacts, compensation, road upgrade, request for project to provide vehicle during construction, livelihood impacts – fishing.	55
Omati villagers (at Road 6)	19/06/2011		Environmental impact, impact of rainy season at landfall, impacts of road construction on water.	40

## 5.2 CRP Disclosure Meetings

### 5.2.1 Overview

The Omati Communal Resources Plan was disclosed in the Gulf area from August 25 to September 10, 2011. The aim was to provide awareness to the local communities affected by the PNG LNG Project Construction activities in the Kikori area of the Gulf Province on the content of the Omati CRP; and to gauge their input and feedback.

Disclosure sessions were held in 5 villages (Goare, Bisi, Apeawa, Samoa, and Babaguna); 3 settlements (Kekea, TFI Logging River Dump Camp, Road 6) and at the Oil Search Kopi Base Camp. A total of 758 community members (277 men, 216 female and 265 children) attended these sessions. The disclosure team spent 10 days covering the 15 stakeholder groups that were deemed necessary to engage.

The sessions were conducted in a combination of languages (English, Tok Pisin and Hiri-Motu) with translators as required.

**Table 4: Summary of Omati Right-of-Way Consultation and Awareness**

CRP Awareness							
No	Group	Venue	Date	Number of Attendees			
				Male	Female	Children	Total
1	Clan Agreement Agents & MOU Executives	OSL-Kopi Base Camp	Aug 25-26	24	2	0	26
2	Kekea Community Members	Kekea Settlement	Aug 28	10	12	16	38
3	Goare Village Members	Goare Village	Aug 29	12	12	3	27
4	Bisi Village Members	Goare Village	Aug 29	1	3	1	5
5	Ai'dio Village Members	Goare Village	Aug 29	6	3	1	10
6	Kemei Village Members	Goare Village	Aug 29	6	0	0	6
7	Dopima Village Members	Goare Village	Aug 29	1	2	0	3
8	Mubagowo Village Members	Goare Village	Aug 29	5	2	0	7
9	Kerewo Village Members	Goare Village	Aug 29	7	0	0	7
10	Dadebe Village Members	Goare Village	Aug 29	1	0	0	1
11	Bisi Village Members	Bisi Village	Aug 31	41	37	21	99
12	Apeawa Village Members	Apeawa Village	Sep 3	29	8	26	63
13	Omati Aiku Community Members	TFI Logging River Dump Camp Settlement	Sep 5	5	10	15	30
14	Samoa Village Members	Samoa Village	Sep 7	28	27	41	96
15	Omati Keiyu Community Members	Road Six Settlement	Sep 8	46	44	0	90

CRP Awareness							
No	Group	Venue	Date	Number of Attendees			
				Male	Female	Children	Total
16	Babaguna Village Members	Babaguna Village	Sep 9	55	54	141	250
<b>Total</b>	<b>15 stakeholder groups</b>	<b>9 Sites visited</b>	<b>10 Days</b>	<b>277</b>	<b>216</b>	<b>265</b>	<b>758</b>

### 5.3 Summary of Disclosure Meetings, Key Themes Raised

Issues raised by the community can be categorized into the following main themes:

- Social and Environment Impact – this captured concerns the communities had around impact to their livelihood and to the environment as a result of the construction activities.
- Entitlements – this included questions and concerns raised around legislative, payment arrangements, land ownership, and recognition.
- Operations – this captures items that were raised in relation to processes, activities and approaches that the Project was using in carrying out its business.

All 9 engagements raised issues in relation to construction social and environmental impact. The main concerns were access to Kikori station for health services, use and protection of their waterways, fish and sago for their livelihood, and habitats for marine life that they depend on. They also raised issues such as increase in domestic issues related to alcohol, marriage and requested support for social services such as health, education and other social and economic development programs. L&CA has put in place monitoring mechanism during the construction period and after to monitor the impact on the livelihood of the impacted communities.

Issues around entitlements were raised in 8 engagements. The only community that did not raise the issue of entitlements was the Kekea Settlement. The primary community concern is recognition by DPE for the waterways area to be given a license portion. Another area concerned explanation on their rights and understanding of various mechanism and arrangements to access landownership benefits. L&CA will work through the government to provide responses to the community.

Concerns around operations were raised in 6 of the engagements. These ranged from questions on the grievance process; construction activities and schedules; level and frequency of visits; road and sea travel safety; and opportunities for employment.

For detailed summaries of each disclosure meeting, see Appendix 2: Disclosure Meeting

## 6.0 PROJECT IMPACTS

### 6.1 Construction

Multiple efforts have been made to reduce potential construction impacts in the Omati River and shoreline communities.

**KP 0-26 Omati River:** The work was approved by the Department of Environment and Conservation (DEC) to dredge sections of the Omati River. Continuous effort has been made to reduce the volume of sediment to be dredged and optimize dredging methods. For example, tidal patterns were analyzed in parallel with vessel movements and unnecessary weight removed from the pipelay barge to reduce its draft.

#### 6.1.1 Access to Traditional Fishing Grounds due to Exclusion Zones

During pipeline construction, there will be an exclusion zone around the pipelay barge and dredging vessels for five months between October 2011 and February 2012; however, communities will be able to pass the construction vessels to travel along the Omati River to access other fishing camps and Kikori.

The Omati River at its widest is 2.2 kilometers wide at approximately KP13.5. At its narrowest, it is 700 meters wide as the river passes an island between KP 3-5. When the vessels are in this narrow part of the river, the communities could pass on the other side of the island if unable to pass on the construction side. Figure 3 shows the Omati River, the KP markers, and also the 730 meter wide exclusion zone of the pipelay barge.

During the shore pull in early January 2011, the A'a passage near the Omati landfall may be blocked but this will be between 3-4 days. As this is the only route from the Omati River to the market, schools and villages in Kikori for people living in Omati, Goare, Ai'dio, Dopima, Kemei, and Mubagowo, communities will be escorted around the pipelay vessels or allowed to pass through when and where it is safe to do so.

Impacts during the fiber optic cable installation is expected to be minimal given the size of the vessel (smaller than both dredging and pipelay vessels) and length of time in the river. Communities will be able to pass by to access fishing camps.

#### 6.1.2 Impacts to Water

Fisheries studies report that communities use the river for drinking water. Populations living at Goare, Ai'dio and Mubagowo villages have water tanks for drinking and cooking purposes. Because Goare's water tanks are currently not functioning effectively, they use a natural well for drinking and cooking purposes.

Environmental studies undertaken on the impacts of dredging in the Omati River indicate minimal impacts to the river. The lower Omati River is highly turbid, and water quality results indicate that Total Suspended Solids (TSS) are higher during flood tides. The approximate magnitude of naturally occurring daily sediment transport in and out of the Omati River (during ebb and flood tides) is 60,000 m<sup>3</sup> (96,000 tones). The total volume of material to be dredged over 3 months is estimated to be 390,000 m<sup>3</sup>. On average, the dredging volumes are less than 10% of the daily tidal sediment load.

A pre-construction survey was undertaken in November and December 2010 to determine any pre-existing concentrations of contaminants in the sediments in the areas of dredging. The results from the sampling program did not identify any contaminant concentrations elevated beyond expected background values. Screening levels under the Australian National Assessment Guidelines for Dredging are not expected to be exceeded during dredging.

### 6.1.3 River Traffic

While communities will be able to pass by the construction activities and fish in other locations, the greatest impact to communities will be the amount of traffic in the river at any given time. There will be the core construction vessels (dredgers and pipelay barge) supported by supply vessels, crew change vessels, two accommodation barges, and cargo barges supplying pipe to the pipelay barge. Construction operations will be ongoing, 24 hours a day 7 days a week duration.

The dredgers and pipelay vessel travel no more than 3 to 5 knots while working. The smaller support vessels are required to slow down to speeds that will not swamp or overturn local canoes and dinghies. Additionally, as the pipeline route primarily follows the centre of the river, there is a near-shore corridor between the exclusion zone and river bank that small canoes can use for travel.

The Project has established permanent community affairs presence in the Omati River to keep waterway communities abreast of daily construction activities, advise of safe travel routes, monitor vessel speed and impacts to waterway users, and receive community grievances and address concerns as they arise. See Section 6.4.

### 6.1.4 Non-Customary Waterway Users

The impacts to non-customary users of the waterways is expected to be minimal due to the low volume of traffic. Logging barges transit from the upper Omati River through the A'a passage to Pai'a Inlet a few times per month. The logging Project has been advised of construction operations and will continue to be advised throughout construction.

For other commercial vessels using the Omati River, the National Maritime Safety Authority has issued a notice to mariners advising them of the offshore pipeline installation operations in the Omati River, Gulf of Papua and Caution Bay.

## 6.2 **Operations**

No impacts are expected during operations.

## 6.3 **Other Impacts**

Other impacts which will occur during construction include indirect effects of lighting, visual impacts, and noise and vibrations. These are considered minor short-term impacts.

## 6.4 **Monitoring and Field Support**

An L&CA field officer and a village liaison officer (VLO) will be stationed on the Omati River for the duration of construction work. Both will live onboard the accommodation vessel and operate on the waterways by small boat. Their roles and responsibilities are outlined below.

### L&CA Field Officer - Omati River/ at Landfall

- Interface with (superintendent, vessel captain, construction manager) regarding daily construction activities on river and landfall – at daily toolbox meeting
- Interface with community (with VLO) to advise them of daily construction activities, as required
- Interface with vessel captains to warn them of community members in vicinity of project work – monitor speed and safe travelling
- Report any incidents of unsafe practices on waterways that could endanger communities travelling along waterways
- Receive community complaints/ concerns/ issues and address them with Contractors and project team
- Liaise with community members to keep them away from the worksite and vessels

- Advise the community travelling along the Omati River on safest passages to travel along while work is taking place, and assist if necessary
- Receive 3rd Party Grievances (community grievances) away from worksite at Goare or Ai'dio village
- Provide feedback to complainant raising grievance through 3rd Party Grievance Process on closure of grievance
- Facilitate meetings away from worksite, at Ai'dio or Goare villages, with communities if they have a grievance or threat to stop work

Village Liaison Officer - Omati River/ at Landfall

- Interface with superintendent, vessel captain, construction manager regarding daily construction activities on river and landfall – at daily toolbox meeting
- Interface with community, on the river and in villages along the river, to advise them of daily construction activities with L&CA field officer
- Liaise with community members to keep them away from the worksite and vessels
- Advise community travelling along the Omati River on safest route to travel whilst work is taking place
- Interface with vessel captains to warn them of community members in vicinity of project work – monitor speed and safe travelling
- Report any incidents of unsafe practices to L&CA field officer on waterways that could endanger communities travelling along waterways
- Facilitate meetings away from worksite, at Ai'dio or Goare villages, with communities if they have a grievance or threat to stop work

## 7.0 ELIGIBILITY AND ENTITLEMENTS

The RPF describes criteria for compensation adopted for the Project. Table 5: Eligibility and Entitlements

lists criteria adopted by the Project for community compensation during construction.<sup>3</sup>

**Table 5: Eligibility and Entitlements**

Affected Category	Assistance/ Compensation	Considerations for Implementation
<b>REDUCED ACCESS TO OMATI WATERWAYS DURING CONSTRUCTION</b>		
<b>Eligibility:</b> Persons and clans recognized as landowners of water to which access is reduced.		
Individual/ household landowners and land users with reduced access to waterways due to Project activities.	Payment will be made to clans within the final ROW along the Omati Waterway.	Clearly inform affected group leaders about site development and land allocation schedules and regulations.  Compensation paid as agreed to Clans.
	Compensation for the use and enjoyment of the surface of the riverbed (K321 ha) for the Omati Waterways.	The Project will pay Clans at a rate per year at equivalent market rates (currently negotiated at K321 for landowners in PLAF 3 and PLAF 5 (KP173 – 226), and K400/ha for landowners in PLAF 6 (KP 153 -173), to be verified against market rates) for each hectare of waterways occupied (but not otherwise damaged) by the Project for depriving landowner(s) of the use of the surface of the water, for cutting clan members off from other parts of their land, and for any loss or restriction of rights of way, in compliance with Section 118(2).
<b>CONSEQUENTIAL DAMAGES</b>		
<b>Eligibility:</b> Recognized Landowners		
Individual/ household landowners of land along Omati Waterways.	Compensation for initial damage to naturally occurring nypa, mangroves, sandbars, marine mammals and reptiles, or fish or crustaceans.	At this time, there is no foreseen damages to individuals' lands; however, if damage occurs, the Project will make a single payment to the landowner(s) for any damage on their land to the natural bush, birds, and fish at equivalent market rates (currently negotiated at K1,287 for landowners in PLAF 3 and PLAF 5 (KP173 – 226), and K1,287.50 /ha for landowners in PLAF 6 (KP 153 -173), to be verified against market rates) for each ha of land on which the Project damages the natural bush.
<b>Eligibility:</b> Persons and clans recognized as landowners of land and waterways to which access is reduced for Omati.; Persons and Households downstream of PROW along the Omati River		
Individual/ household landowners and land users with reduced access to land due to Project activities.	Cash or in-kind compensation or additional clan compensation.	Clearly inform about monitoring activities and monitoring outcomes during construction and for 1-year post construction.  If monitoring or grievance reporting reveals consequential damages, additional compensation for clans and/or individuals will be implemented based on assessing the situation and the impacted community.

<sup>3</sup> This excludes royalties paid by the government to communities along the pipeline.

## **8.0 LIVELIHOOD RESTORATION PROGRAM**

The Project will ensure it restores impacted livelihoods in accordance with IFC PS 5 and the RPF. Livelihoods are expected to be only temporarily impacted and limited to a small number of fishers during construction. Fishers and resource users temporarily affected by short-term economic losses will be compensated for deprivation and consequential damages resulting from short-term construction exclusion zones. If unforeseen long term-economic impact occur a livelihoods restoration program will be developed and implement to ensure fishers are the same or better off during project operation.

## **9.0 GRIEVANCE MANAGEMENT FRAMEWORK**

The process for Omati ROW villagers to lodge grievances is through the Project Grievance Procedure, which applies across all Project areas. The Grievance Procedure is available to people affected by displacement, other local populations residing in the Project impact area, and other stakeholders directly affected by the Project.

The Grievance Procedure to be adopted is defined in the RPF. The Project will disclose information about the grievances mechanism to the potentially affected communities, 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 updates (such as newsletters and posters).

The Grievance Procedure has been previously disclosed to potentially affected villages, interested persons and organizations. The transparency and fairness of the process will continue to be explained during stakeholder engagements.

## **10.0 ORGANIZATIONAL ROLES AND RESPONSIBILITIES**

The Project is responsible for overall planning, implementation, and monitoring as per the RFP. It is implemented by the Project's Land & Community Affairs team. The Monitoring and Evaluation system (M & E) provides 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. The Social Impacts Team Coordinator will coordinate M&E internal and external implementation.

## **11.0 MONITORING AND EVALUATION**

The Management and Evaluation system (M&E) provides Project management, and directly affected persons, households and communities, with timely, concise, indicative information on whether compensation and related development investments are on track and achieving Project goals. This effort is monitored on a quarterly basis during the construction period by the fisheries team

## 12.0 IMPLEMENTATION SCHEDULE

Table 6: CRP Implementation Schedule lists tasks to implement the CRP.

Table 6: CRP Implementation Schedule

Activity or Task	Actions	2011					
		J	A	S	O	N	D+
Planning/Disclosure	CRP Disclosure						
Approvals	Complete CRP and submit to lenders						
	CRP summary to community						
Confirm and finalize IPCA compensation	Complete clan agency agreements						
	Finalize any entitlement contracts						
Compensation payments	IPCA payments						
Verification and monitoring	Quarterly through construction period						
	Internal monitoring thru 2013						
	External evaluation (including completion audit)						

## 13.0 COST AND BUDGET ESTIMATE

Budget provision of approximately PGK 0.7 million is made for the life-of-the project.

## APPENDIX 1: FIGURES

Figure 1: Offshore Pipeline Route from LNG to Omati Landfalls

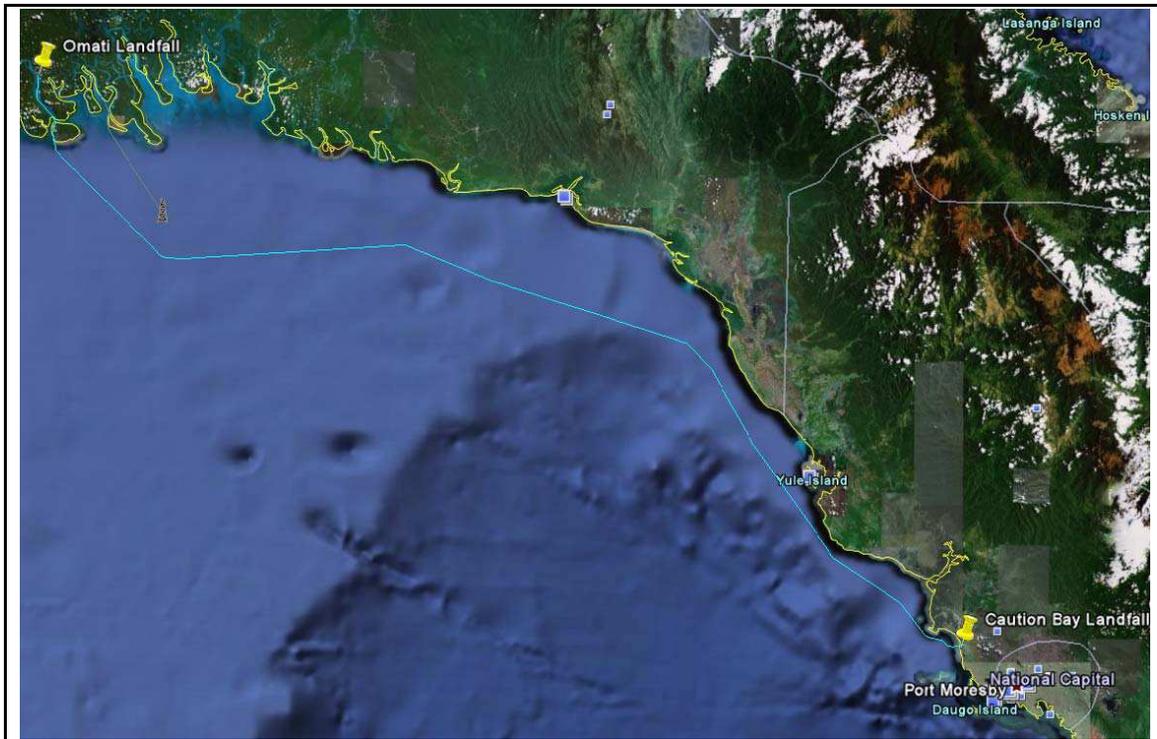


Figure 2: Omati River Right-of-Way Villages

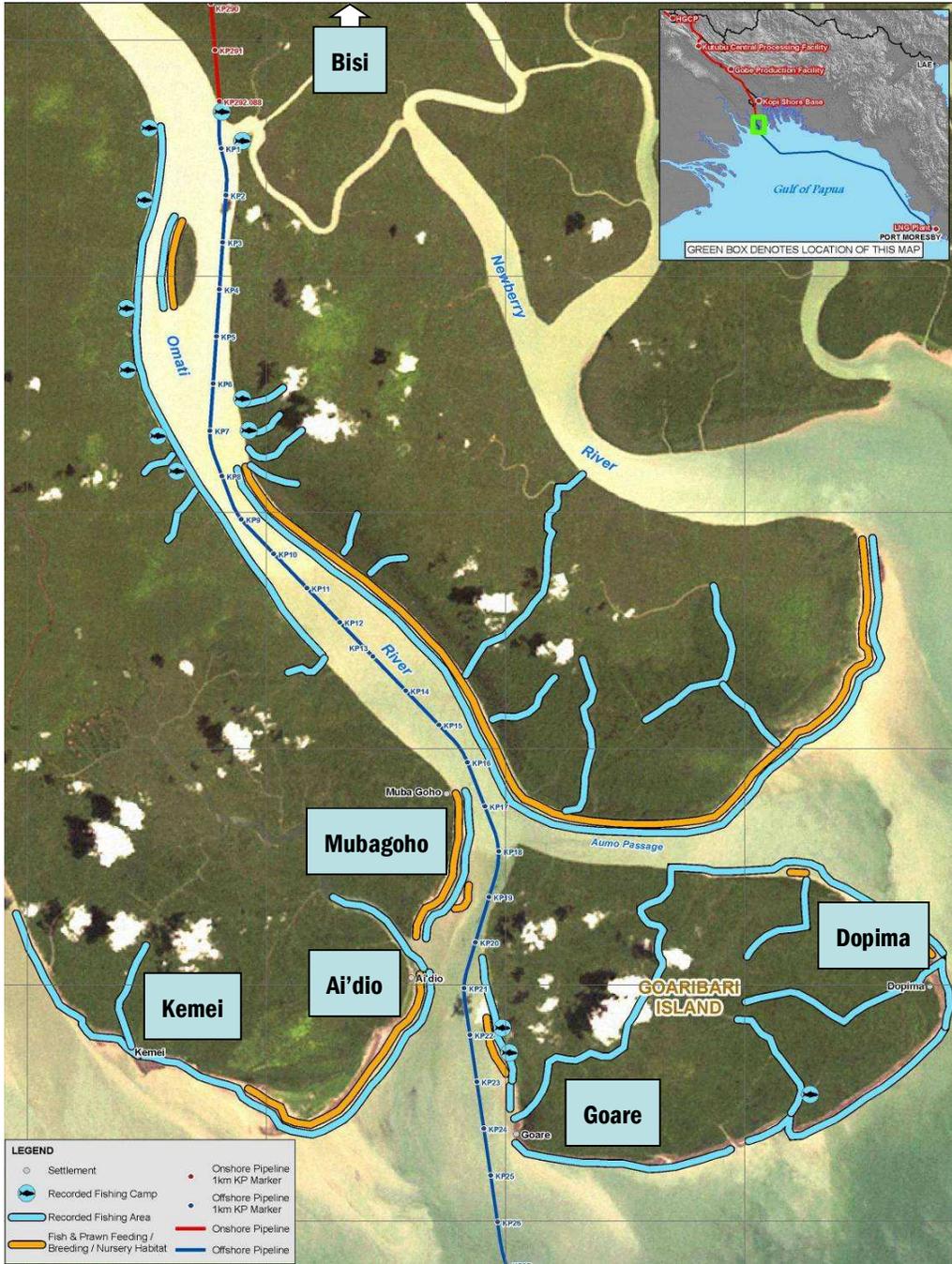


Figure 3: Omati Exclusion Zone Corridor

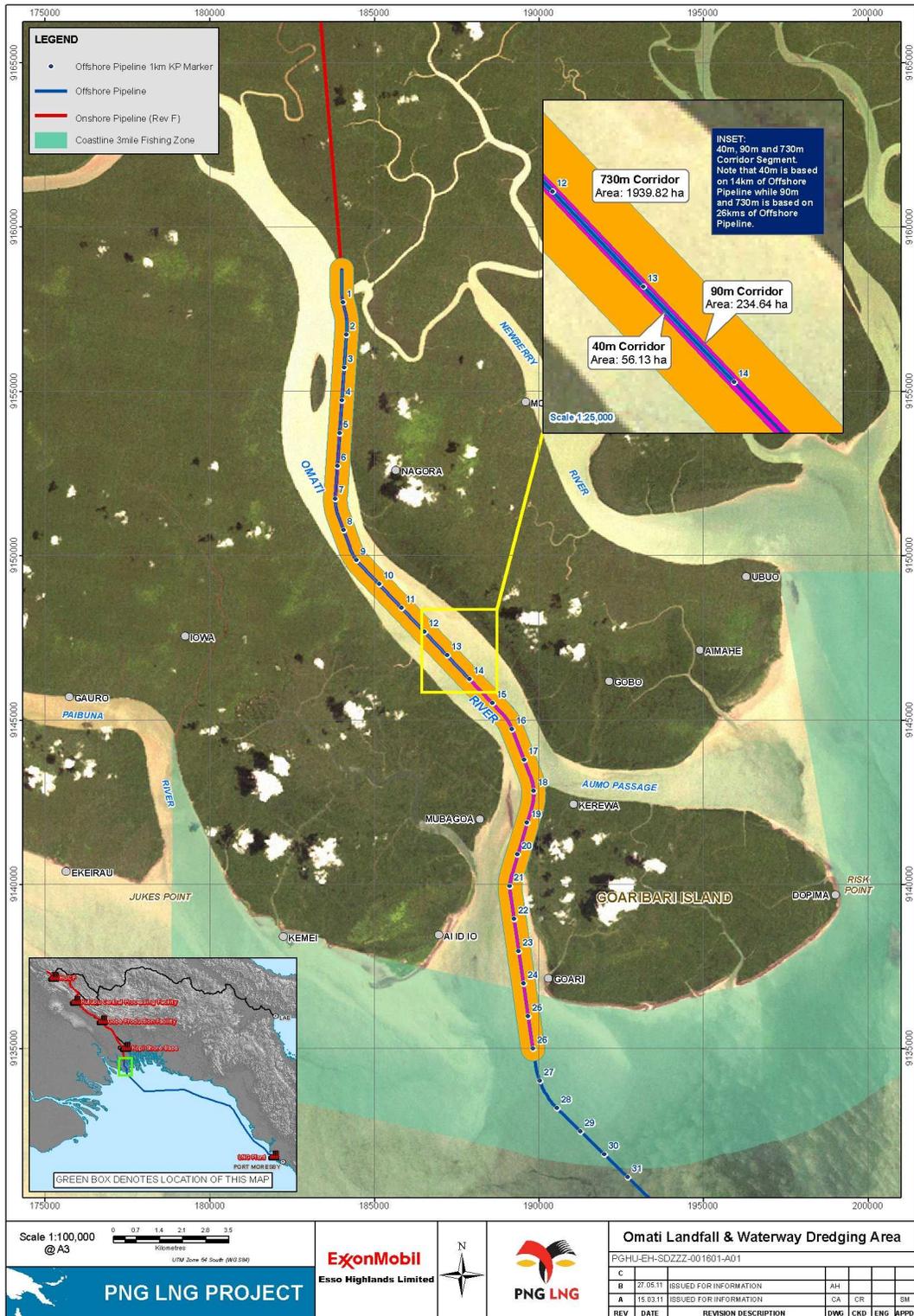


Figure 4: Typical Trench Position Relative to Access Channel (KP 0.5 to 30)

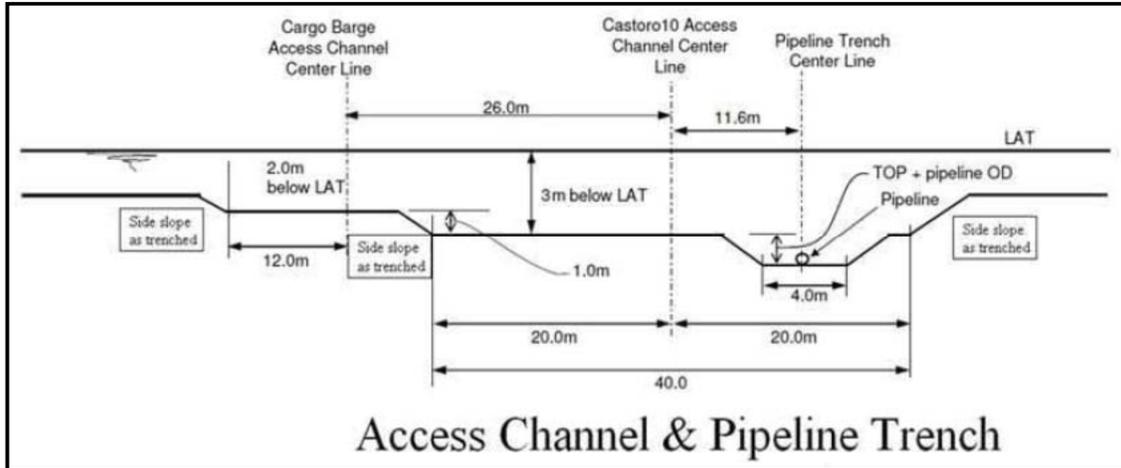
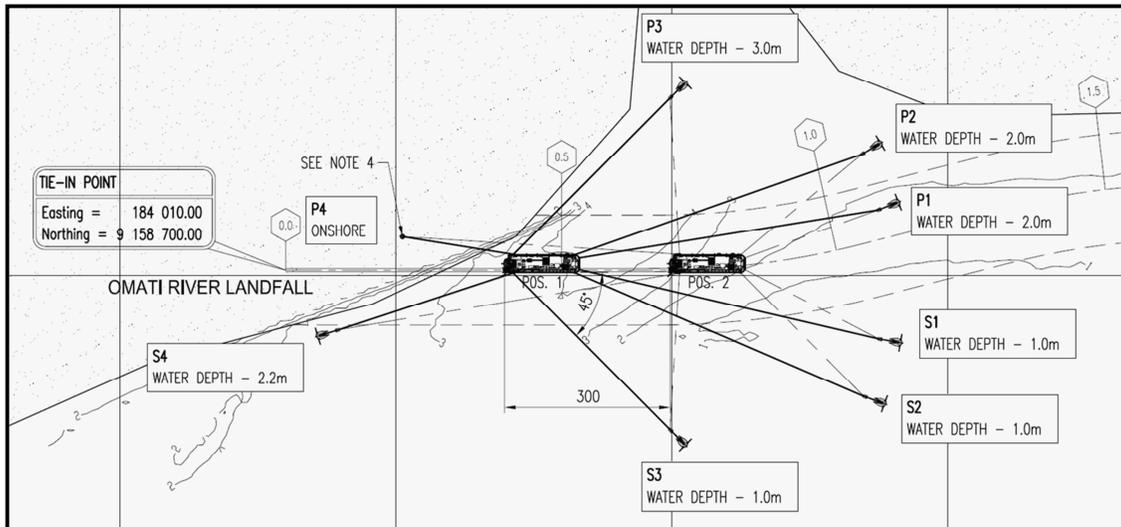


Figure 5: Pipelay Barge and Anchor Patterns at Omati Landfall and A'a Passage



## APPENDIX 2: DISCLOSURE MEETINGS

### A. Disclosure Awareness Team Composition

Team	Composition	Villages Covered
<b>A</b>	Ursula Kolkolo- L&CA Fisheries	Clan Agents/ MOU Committee/ Bisi Village/ Apeawa Village (5 Villages) (3sites)
	Josepha Kiris – ELC	
	Margarte Fina- L&CA Stakeholder Engagement	
	Ken Yai- EPC 2	
	Lisa Sumari- L&CA Community Affairs	
	Prosey Kari- L&CA Stakeholder Engagement	
<b>B</b>	Ursula Kolkolo – L&CA Fisheries	Kekea Settlement & Goare Village (2 Sites)
	Josepha Kiris- ELC	
	Margarte Fina – L&CA Stakeholder Engagement	
	Ken Yai – EPC 2	
	Lisa Sumari- L&CA Community Affairs	
<b>C</b>	Ursula Kolkolo – L&CA Fisheries	Omati Aku Community @ TFI River Dump Camp (1 Site)
	Josepha Kiris- ELC	
	Margarte Fina- L&CA Stakeholder Engagement	
	Ken Yai – EPC 2	
	Lisa Sumari – L&CA Community Affairs	
	Morris Bori – VLO for Omati	
<b>D</b>	Ursula Kolkolo – L&CA Fisheries	Samoa Village (1 Site)
	Josepha Kiris- ELC	
	Margarte Fina- L&CA Stakeholder Engagement	
	Ken Yai- EPC 2	
	John Aukei- Village Translator	
<b>E</b>	Ursula Kolkolo – L&CA Fisheries	Omati Keiyu (1 site)
	Josepha Kiris- ELC	
	Margarte Fina- L&CA Stakeholder Engagement	
	Ken Yai- EPC 2	
	Pastor John Kimave- Village Translator/ Leader	
<b>F</b>	Ursula Kolkolo – L&CA Fisheries	Babaguna Village (1 Site)
	Josepha Kiris- ELC	
	Margarte Fina- L&CA Stakeholder Engagement	
	Ken Yai – EPC 2	
	Rexley Palibe- L&CA Lands Officer	
	Wahega Katue- Village Councillor & Translator	

## **B. Basic Disclosure Agenda**

1. Opening Prayer
2. Overview on Agenda
3. Welcome and Introductions
4. Role of Environmental Law Center
5. Grievance Process
6. Saipem Scope of Works; Construction Schedule and Safety Messages
7. Focus Group Meetings – breaking groups into gender groups to discuss
8. Recording of Grievances Raised
9. Closing Prayer

## **C. Community Engagements**

### **1. Clan Agent & BRW MOU Executive & Women Leaders Meeting**

This meeting was attended by the 8 Barging Route Waterways (BRW) Executive Committee members, Clan Agreement Agents for the IPCA Compensation for the Omati River Right of Way; 2 women representatives and 2 Ward Councilors for Goare, Babaguna and Bisi villages. A total of 26 people (2 females) attended. The meeting with this group was conducted from the 25 – 26 August.

#### **Issues 1.1: Entitlements**

There were 14 issues, questions or comments made that related to the Entitlements. These entitlement issues can be further categorized into the following:

Recognition of the A'a landfall to Goare as a portion like other portions identified on land and for benefits to be distributed to those villages that live along that area from DPE. Questions and concerns around legislative issues such as the UBSA and LBSA agreements and arrangements; Oil and Gas Act; Land Act; Royalty and Equity payments and arrangements; and how compensations are determined. There were also some indication of actions that the community would take to stop the project if the recognition of the waterways area as a portion was not addressed.

#### **Issue 1.2: Operations - The Grievance Process**

There were 9 points raised on this topic. These mostly related to clarification of the process of lodging and getting feedback and concerns that they have. Noted concerns were whether this process applied to contractors as well, and whether there were government representative that would be available to hear community grievances. They also stressed the importance of responses been in writing. They also raised an issue that related particularly to OSL operations.

#### **Issue 1.3: Construction Social and Environmental Impact**

There were 4 points raised around the implications of current construction activities. Most of these concerns were raised by the two female participants. Concerns related to access to food i.e. gardens and fish; to water, and health services. They were also concerned from experience that OSL operations had caused some pollution to the water that resulted in skin diseases. They wanted feedback on what sorts of support would be available to them and their families if these things happened.

The women also raised the issue of social problems they were facing in the communities due to this project. They saw that men were no longer treating their wives and children with respect. The increase in market areas along the roads they felt were contributing to this issue.

<b>MEETING DESCRIPTION</b>	Clan Agreement Agent Members and the Barging Route Waterways MOU Committee Executives.
<b>VENUE</b>	OSL – Kopi Base Camp
<b>DURATION</b>	2 day meeting. Day 1 – 25 August (10am – 4pm) Day 2 – 26 August (9am-4pm)
<b>PARTICIPANTS DESCRIPTION</b>	26 members in total 2 Female/ 24 male
<b>PARTICIPATION DESCRIPTION</b>	23 questions/ issues were raised by 7 male & 1 female members of the group

Category	Questions/ Issues	Actions Recommended
<b>Grievance Process</b>	<ul style="list-style-type: none"> <li>▪ Our grievances arise because of developer or state's failure to honor their promises.</li> <li>▪ What happens if 30 day grievance response period is over and there is no response to the grievance raised?</li> <li>▪ If the landowners are not happy with the responses of given grievances and becomes an issue, how is the issue going to be solved?</li> <li>▪ Two ways in which communities tendered their grievances: (i) Written grievance, (ii) Verbal grievance. Do they (above grievances) have different grievance procedures?</li> <li>▪ Some grievances in the past has not been raised in accordance to the Grievance Procedure. How would that be accommodated in the Project's Grievance Procedure?</li> <li>▪ Grievances that have been lodged need to be responded to, and this needs to be done in writing not verbal</li> <li>▪ Is there any certain government representatives assigned to hear landowner grievances?</li> <li>▪ Developer's (Exxon Mobil) grievance procedure - Does it apply to contractors and subcontractors?</li> </ul>	<p>These all relate to the grievance process. Initial feedback given during the disclosure. Further follow up on the grievance process needs to be carried out to clarify these issues in various manners.</p>
<b>2. Entitlements</b>	<ul style="list-style-type: none"> <li>▪ Social mapping has messed up the whole thing resulting in the portion of land (landfall to Goare) not being recognized.</li> <li>▪ A landfall to Goare has not been recognized in the UBSA agreement. As a result we will miss out on the equity/royalty benefits.</li> <li>▪ Should landfall to Goare portion of the land be acquired under the Oil and Gas Act? This concern was raised because landowners claimed that they have been restricted from accessing traditional waterways/channels used by the oil Project.</li> <li>▪ No specific criteria in place during the LBBSA to give landowners the privilege to benefit from the LNG project.</li> <li>▪ How are we (and the next generation to come) going to benefit from PNG LNG if we are not recognized by the state?</li> <li>▪ The state needs to recognize us before offshore activities take place.</li> <li>▪ What arrangement will the state apply to compensate landowners for the portion of land used to convey oil or gas in the offshore?</li> <li>▪ According to state law (ref: Land Act), anything 6m and below the surface of the earth belong to the state. Since pipeline is buried 2m to 3m below the seabed, it belongs to the people. Why then, are the landowners not entitled to equity/royalty?</li> <li>▪ Equity/royalty has been granted in oil pipeline (i.e. The landowners are getting the benefits monthly. Why is the same principle not applied to offshore gas pipeline? State and developer must come clear on this matter. Relevant ministers responsible must explain on where we stand.</li> </ul>	<p>Issues around compensation, equity, royalty that need to be resolved with the DPE.</p>

	<ul style="list-style-type: none"> <li>▪ Can compensation be distributed under various category (i.e.land underwater, sacred sites, deprivation of accessing certain passageway), instead of generalizing the whole thing?</li> <li>▪ We want outcomes on the ceremony day; otherwise we will continue to be discontent with the developer.</li> <li>▪ We hope to receive feedback of our grievances raised during the ceremony.</li> <li>▪ Since the 21 days of segment marking has lapsed, we now demand the state to attend to our raised matters within 7 days (i.e..2nd September). This refers to the petition letter sent to the government on the 27th May, 2011. Since then, no respond has come from the state, and this is the last step the landowners have resort to.</li> <li>▪ I have the following outstanding grievances with Oil Search Limited. The first is the area concerned is OSL Kp160, the Kumul Terminal. The specific issues with Kp160 are: (1) No customary land compensation (2) No recognition of customary land owners (3) No royalty or equity payments to the land owners. The second is that the equity from PDL2 has not been paid to the landowners in Kp 160. I also have grievances against OSL for lack of payments under the Kutubu MOA to landowners along the oil pipeline. I have papers on these issues.</li> <li>▪ Recent awareness deliberated on the two proposed routes (i.e.open sea, river channel), that will be used to transport line pipes from Paia'a to Omati River. Is the secondary route (river channel) included in the BRW MOA agreement?</li> </ul>	
<b>3. Social and Environmental Impact Responses</b>	<ul style="list-style-type: none"> <li>▪ Will the project assist us in terms of rations for the period of offshore construction activities?</li> <li>▪ If the project comes and spoils the water, how am I going to access the water to feed our families/children and sometimes the water is used to drink when we don't have water to drink. The water way is our "garden". They are afraid of facing the same experiences of 2003 oil spillage which lasted 2 weeks. Oil Search workers were informed and went to Goare, Bisi and all the way to Omati. When we washed with that water, we had general body ache and some were rushed to the hospital. We hope this will not happen again.</li> <li>▪ Men who are working are no longer treating the women and children with respect. They are drinking more and causing many fights and divorces in their families. Prostitution is also on the increase and now a very common practice. I suggest close all road side markets near the Camps 1&amp;2 because they are breeding grounds.</li> </ul>	<p>Access to food, water. Do we think there will be deprivation during construction and what actions do we have planned.</p> <p>What impacts do we foresee and how will we address these?</p> <p>Increase in negative social behavior. What is our role? We could refer to our work with the village courts on this.</p>

2. Kekea Settlement Community

This meeting covered Kerewo's that live at the Kekea Settlement. Individuals were from Goare, Ai'dio, Mubagowo, Kerewo, Dopima and Kemei villages who migrated to this settlement in order to be near Kikori Government Station services. The 6 points raised can be categorized under one main issue.

### Issues 2.1: Construction Social and Environmental Impact

The group raised concerns about damages to ancestral sites, environmental damage to marine life, water and food supply (sago) and use of the A'abari passage during construction. They raised questions around how they would be compensated for these, and how the project would assist them when these things happened. They also requested whether business opportunities could be given during this period such as providing fish to the work-force that was working in the area. These issues were raised by both men and women.

<b>MEETING DESCRIPTION</b>	Kekea Community
<b>VENUE</b>	Kekea Community
<b>DURATION</b>	28 August, 2011 (09:00-14:00)
<b>PARTICIPANTS DESCRIPTION</b>	38 Members attended 10 Male/ 12 Female/ 16 Children
<b>PARTICIPATION DESCRIPTION</b>	6 questions or issues

Issue Category	Issue
<b>Construction Social and Environmental Impact</b>	<ul style="list-style-type: none"> <li>▪ Concerned on the ancestral sites that will be damaged during dredging and trenching. Can this be compensated differently?</li> <li>▪ 2007 oil spilt during offloading of oil from Kumul Terminal to oil vessel, causing damage to marine lives and the river water. No respond since then.</li> <li>▪ When dredging and trenching take place, we will not be able to travel, make sago, catch fish, and our river will be destroyed. Will the project deal with these?</li> <li>▪ Request for starting up a fishing business to sell to the accommodating vessel during EPC2 activities.</li> <li>▪ Request for the project to provide clean drinking water and rations during dredging/trenching.</li> <li>▪ Concerned on the temporary closure of A'a bari passage during EPC2 activities. How will the project assist the communities in terms of drinking water, supply of sago and transportation?</li> </ul>

### 3. Goare Village Meeting

This meeting was held at Goare village. It included the participation of villagers from Bisi, Ai'ido, Kemei, Dopima, Mubagowo, Kerewo and Dadebe villages. A total of 72 people (39 men; 22 females; 5 children) attended.

#### Issue 3.1: Entitlements

Issues raised here related to clarification on their legal rights; LBSA & USBA arrangements and agreements; compensation payments; the progress on their request for the pipeline segment. They also raised question on compensation payment for an antennae that Saipem has put up and when compensation will be paid for this; and whether local people can be employed to provide security for this infrastructure; and on a TFI payment that has not been made. Although not directly related, this gave them an opportunity to raise these issues.

#### Issue 3.2: Construction period social and environmental impact

Questions raised were around the implications of construction on their ability to travel, access to health facilities, and use of water for drinking and washing, getting food. They wanted to know what means of support will EHL provide for these.

The women raised questions around provision of alternative ways of making money if they will not be able to make money through traditional means such as their fish and crabs and the provision of water tanks during this construction period.

<b>MEETING DESCRIPTION</b>	Goare Village
<b>VENUE</b>	Goare Village
<b>DURATION</b>	29 August, 2011
<b>PARTICIPANTS DESCRIPTION</b>	27 participants 12 male; 12 female; 3 children
<b>PARTICIPATION DESCRIPTION</b>	21 questions/ issues raised by 14 people (4 female and 10 Male).

<b>Category</b>	<b>Questions/ Issues Raised</b>
<b>Entitlements</b>	<ul style="list-style-type: none"> <li>▪ Would you clarify where Customary Law sits under the Constitution?</li> <li>▪ Was there awareness to the local people on BSA and UBBSA prior to EHL starting the LNG Project?</li> <li>▪ The compensation EHL is paying. How much of it is for Water, the land, fish and the environment?</li> <li>▪ My land boundary is with the Kerewo Tribe. Are you compensating me?</li> <li>▪ Given our 7 days notice to the Government, we need confirmation that a Supplementary Agreement on a Pipeline Segment and Government compensation is our request.</li> <li>▪ The land on which the Antennae that Saipem placed needs to be compensated for. When will this happen?</li> <li>▪ There needs to be two securities for the antennae station. We need 2 people employed for that purpose.</li> <li>▪ Will we get compensation after construction?</li> <li>▪ Turama Forest Industries have been logging the Turama River forests and travelling through the Aumoturi Passage for 10 years. There was no payment at all for access! We need help to make Turama Forest be responsible!</li> </ul>
<b>Construction Social and Environmental Impacts</b>	<ul style="list-style-type: none"> <li>▪ During closures of sections of river, how will we travel to Kikori through A'a?</li> <li>▪ During dredging when the water is dirtier than normal, how does my child go swimming?</li> <li>▪ When construction is finished, surely changes to the River will be visible. Is there compensation for that?</li> <li>▪ We have experience showing in the Kikori River that sandbanks that were unknown before are now prevalent. Will that be the case for the Omati?</li> <li>▪ What is EHL's Emergency Response Plan for the Community during dredging and closures for food, access to Kikori during bad weather etc?</li> <li>▪ With the 4 months of construction I am most unlikely to be moving around. I need a health worker living with me in the village for medical support .</li> <li>▪ Our normal route for travelling to Kikori from the Turama River is through A'a Passage. How will you assist us to go Kikori during closures of A'a Passage?</li> <li>▪ She expressed concern of not being happy with the Project working in the waterways as this would spoil their water. The water is their life; given that water is used for fishing, cooking and travelling back and forth to Kikori, gardening and making sago. Their water will be spoilt.</li> <li>▪ Urgent need for an aid post for the village/community. When the weather is bad they stayed back and some very sick persons lose their lives.</li> <li>▪ As the Vice Chairlady of Goare Women's Fellowship, she express fear of not accessing the water/river to fish or catch crabs to go and sell at the market (Kikori). They believe that the construction activity will hinder their daily activities and suggested if the project can help with a couple of sewing machines with</li> </ul>

	<p>materials to start start them off so they can:(i) teach others who don't know how to sew, (ii) collectively sell their handiwork at the market to substitute their crabs so that they still earn money from the sales.</p> <ul style="list-style-type: none"> <li>▪ The project will be working for 4 months at the most and therefore our access to food and water would be blocked. Given the 10 days closure of A'abari passage, will the Project supply us food, water, medical treatment during the duration of the 4 months and 10 days blockage of the passage.</li> <li>▪ Concern over drinking water: During the month of September and October, community tend to have hard time with drinking water, and they normally fetch water from the river to drink and cook their food with. The only source of clean drinking water is supplied by the OSL supplied tank which is already low and drying up. Can the project/Saipem looked into helping us with several tanks for our water storage? Our water will be dirty during the construction period.</li> </ul>
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4. Bisi Village Meeting

This meeting was held at Bisi Village and was attended by members of the village. A total of 99 villagers (41 men; 37 women and 21 children) came to the meeting.

Issue 4.1: Entitlements

The main concerns raised were around how compensation would be paid and when they would expect payments to be made. They also raised the issue of recognition by the UBSA arrangements and agreements.

Issue 4.2: Construction social and environmental impact

The concerns raised were mostly again by women on the water, ability and damage to food source such as fish and sago making. They wanted to know what sort of compensation would be available for this.

Issue 4.3: Operations Construction plans & schedule

There was 1 question about when the vessels would come into the Omati River.

<b>MEETING DESCRIPTION</b>	Bisi Village Community
<b>VENUE</b>	Bisi Village
<b>DURATION</b>	31 August
<b>PARTICIPANTS DESCRIPTION</b>	5 Participants 2 males; 3 females and 1 child
<b>PARTICIPATION DESCRIPTION</b>	8 questions/ issues raised by 6 people (3 female and 2 Male).

<b>Category</b>	<b>Questions/ Issues Raised</b>
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<b>Entitlements</b>	<ul style="list-style-type: none"> <li>▪ We are very happy that the project is developing in our land/water. However, in terms of compensation offshore have not received our share yet, and are still waiting.</li> <li>▪ Our concern is that we are going to miss out on royalty/equity because we have not been recognised in the UBSA meeting.</li> <li>▪ Landfall to Tauokaeidio creek and Kopito creek is the tribal boundary between Hauamere tribe of Bisi and Kerewo tribe of Kerewo. How will the compensation be distributed..i.e. Clan or tribe distribution?</li> <li>▪ What is the project going to do for us because it is going to destroy our ancestors' burial ground under the water? How is the project going to make us happy?</li> </ul>
<b>Social &amp; Environmental Impact</b>	<ul style="list-style-type: none"> <li>▪ Will our water be spoilt with all the mud and dirt?</li> <li>▪ We are sure that all our fish will be destroyed by the dredging/trenching activities. Even the fish we catch might be poisoned and we will die if we eat them.</li> <li>▪ The waters will be spoilt during the construction activities, and we will be unable to wash our sago with dirty water. My sago making will be stopped. Will the Project compensate me?</li> </ul>
<b>Construction schedules &amp; plans</b>	<ul style="list-style-type: none"> <li>▪ When is the construction vessels coming into Omati River?</li> </ul>

5. Apeawa Village Meeting

This meeting was held in Apeawa village. It was attended by 63 members (29 men; 8 women and 26 children) of the village. The following are the issues they raised.

Issue 5.1: Entitlements

Questions related to how compensation would be paid and who were the people that it would be paid to. There were also concerns around how benefits are derived from the use of the river for barging. They also expressed concern about the Barging Route Waterways Committee and how they were not properly represented in this. They raised this because TFI has been using their waterways to barge logs for many years and they have not benefited from this. They feel the same would occur again.

Issue 5.2: Construction social and environmental impact

Again their highlighted the consequences they felt would happen from this construction activity. They asked how the project would help to address these issues and suggested some areas for consideration such as building health facilities.

Issue 3: Operations & Awareness

One member raised a concern that their VLO and Councilor were not keeping them informed enough about messages related to the project. They felt this needed to improve.

<b>MEETING DESCRIPTION</b>	Apeawa Village
<b>VENUE</b>	Apeawa
<b>DURATION</b>	3 September, 2011
<b>PARTICIPANTS DESCRIPTION</b>	63 participants 28 Male; 8 Female; 26 children
<b>PARTICIPATION DESCRIPTION</b>	9 questions/ issues raised by 5 individuals (4 male and 1 female)

Category	Questions/ Issues Raised
<b>Entitlements</b>	Concern is on the barging route, especially the secondary route from pipe-lay at Pai'a (river channels) to the Omati River ROW. Is the use of channels guarantee them for compensation with the Kerewo's?
	Is compensation going to be distributed in categories, i.e environmental damages, deprivation, etc or given in whole?
	Some of us have land in the Omati River where the construction will take place, and we are entitled for compensation. However, our concern is those who do not have any part at all in the construction site. Will they benefit from the use of the river channels (barging route)? This is a major concern from the community as they feel not being represented in the BRW MOU and not included as well.
	Will we be compensated by the Project for them using our River?
	For so long Turumu Forest Industry (TFI) has been using the channels travelling to and from Paia'a, and nothing good has been given to us as a way of appreciation. We are afraid that the project will follow suite.
<b>Social &amp; Environmental Impact</b>	The LNG Project has come and we understand that it will extract gas and pipe it using our land and water. Soon they will begin to lay the under water pipeline at the Omati River. Can the project be able to help especially us the women and children through our Women's Fellowship Group?
	During the Chevron days to the Oil Search and now LNG-PNG/Esso Highlands we have not seen much or nil basic services delivery. And now we will be witnessing the EPC2 construction activities, if there is an emergency will the Project help us or better still build us new Aid Posts or Clinics?
	With the EPC2 Construction activities going on in the Omati River, we are going to be faced with dirty water to wash our sago. Is the Project going to do anything about it?
<b>Operations - Awareness</b>	I am not very happy with our VLO-Kenneth Korokai and Councillor Buare. They must be fair with us all and when there is any to save to be made known it must be done. They sometimes do not include us in their planning or awareness from the projects are not delivered to us. And so we feel left out. One good example is the 'Goare Ceremony'- we have not been informed of any if not the latest happenings.

## 6. Omati-Aiku Settlement Meeting

The members of this community are originally from Omati Village. They are landowners of the area that TFI is using for their logging operations. They transit through A'a passage and have fishing camps along the Omati ROW landfall area.

### Issue 6.1: Entitlements

Stated their claim why they should also be considered for compensation.

### Issue 2: Social & Environmental Impact

They raised concerns about access to Kikori station in particular for medical services both via the road and the river. They mentioned that the road is in bad condition.

<b>MEETING DESCRIPTION</b>	Omati –Aiku Village
<b>VENUE</b>	Aiku Village
<b>DURATION</b>	5 September, 2011
<b>PARTICIPANTS DESCRIPTION</b>	30 Participants 5 male; 10 female; 15 children
<b>PARTICIPATION DESCRIPTION</b>	3 issues were raised by 2 people

Category	Questions/ Issues Raised
<b>Entitlements</b>	The Kaivere River where we are today connects to the Omati River downstream. The tide brings up coastal waters to us and the freshwater flows out past Goare and Dopima. The Kerewo's are getting compensation. What about us considering that dredged sediment will be transported up or down the river depending on tide for that day?
<b>Social &amp; Environmental Impact</b>	Our people travel through A'abari Passage to Kikori to access services. What is your emergency response plan for us for medical emergencies during the four months your boats will be working in the River?
	The concern about this village not being able to get through A'abari during offshore construction time is this. Currently the road to Kikori from this village has been damaged for several months by Speicapag and hasn't been fixed yet. We need help during emergencies to get to Kikori.

### 7. Samoa Village Meeting

Samoa village is located away from the construction site, but has people from Goare, Ai'dio, Mubagowo, Kerewo, Dopima, Kemei and other Kerewo villages. They were relocated from Goaribari Island in 1900's by early missionaries to learn to do missionary work and other services such as build boats and general carpenters. The session was attended by 96 villagers (28 men; 27 women and 41 children).

#### Issue 7.1: Entitlements

They raised questions around employment opportunities with Saipem and for women. Leaders also mentioned that although they were Kerewo villages they were not included in the Barging Route Waterways MOU arrangements.

#### Issue 7.2: Construction Social & Environmental Impact

Agreed that they will keep away during construction period but raised questions on whether the compensation is adequate for the period they are deprived from using the area. They raised concerns on access to water, fish and sago during construction period. Raised questions on what plans are in place to address this. Furthermore, they asked about support that can be provided to women groups, construction of health and education facilities.

They also raised concerns about the breeding season for the turtles and survival of fish in the waterways and wanted to know what considerations were made for this. They raised the importance of monitoring after construction stressing that the project continues to monitor the area to ensure that any effects from the construction work are identified and addressed. They also wanted to know who will be responsible for monitor the pipe after it is laid under the river. They feel that the high-tides are caused by the existing oil pipeline.

#### Issue 7.3: Operations Awareness

They raised concern that the VLO was focusing on the Goare area only and not on them, even though they are Kerewos. They were happy that the team had come out for the first time to let them know about project activities and that independent lawyers were observing and providing advice as well.

<b>MEETING DESCRIPTION</b>	Samoa Community
<b>VENUE</b>	Samoa Village
<b>DURATION</b>	7 September, 2011
<b>PARTICIPANTS DESCRIPTION</b>	96 Participants 28 Female; 27 Female & 41 Children
<b>PARTICIPATION DESCRIPTION</b>	3 issues were raised by 2 people

Category	Questions/ Issues Raised
<b>Entitlements</b>	Will there any employment with Saipem when construction starts like Spiecapag?
	Samoa is a Kerewo village and was established before Bisi and Ero villages. Samoa has land along the Barging Route MOU arrangement. We must be recognized as a Narging Route Community.
	Chief of Neaurimo Clan: Have long term benefits been declared for communities and clans living in the buffer zones of the gas pipeline?
	Can we the Women be employed as cleaners/cooks to work on the boats?
	Has the govermemnt granted us the Kerewos the Segment No.9 or not?
	Will we be compensated for the use of our water by the Project?
<b>Social &amp; Environmental Impact</b>	I am from Ae'dio originally. In the four months that construction will occur in the River, we will respect and keep away. However, the compensation that the Project will pay, is the amount enough to sustain everyone for the four months? If not what is your back-up plan after the four months?
	Turtles along the Omati River have specific feeding and breeding grounds. The excess spoil from the dredging and trenching will affect their feeding areas. Where will the turtles go to feed if you affect their habitat?
	The Omati River system has daily tidal flows unlike the Kikori River. I request that the Project monitors environmental issues to ensure that future impacts will be addressed after construction.
	My concern is that after construction I feel that future environmental damage is not accommodated in your current plans. With Chevron Niugini, after they left the current sandbars in the Kikori is not being addressed. I request the PNG LNG Project to be more responsible for future impacts. I am asking the Project t consider paying us for environmental damage after 2014 onwards, which is after construction.
	Who is responsible for Environmental Monitoring after the pipe lay work is completed?
	Before we never see extreme high tides. Nowadays the water level is rising and more and more of the banks are going underwater. We think that the sandbars in the Kikori from the OSL oil pipeline are causing it.
	When the actual construction is in progress will I be restricted from using or having access to the river to fish and make sago?
	Will Saipem give us anything like sponship or buy sewing machines, etc. to help us the Women's Group (Revival Centre of PNG) to go for our Annual Meetings/Conferences?
	Saipem should be able to help us with building clinics & schools for us as a sign of gratitude for using our water ways
	If we the community and or the elementary school come to you for help, will you be able to help assist me?
	Will the fish be affected by the dredging and treching activities
<b>Operations- Awareness</b>	This is the first time that LCA has come out and informed us of the Gas Project along the Omati River. As Kerewo's we need to know and you have done that today. Please continue to keep us informed.
	Why was Kenneth Korokai the VLO for Goare not coming over to Samoa, a Kerewo Village and informing us of constructure activities along the Omati River? He only focuses on Goare Village.
	We are privileged and thanks the Project that for the first time, we have a Lawyer present to explain where and how our customary land ownership stands with the Constitution. In the Chevron days this was not happening. Thank you to PNG LNG Project
	My concern is that I hope PNG LNG is honest in dealing with us. What I mean is that each time a new oil and gas Project comes, they must not use the previous arrangements to "set up their business" but be honest in negotiating with us.

Category	Questions/ Issues Raised
	This PNG LNG Project sounds good but it is good to do everything according to God's Plan and Wisdom. This is so that our future is improved and does not remain the same since Independence! I think that God has now blessed the Kerewo's towards an improved future.

### 8. Omati Keiyu Settlement Meeting

Omati Keiyu is another Omati Village settlement that located on Road 6, a few kilometers from the Kopi Scaper station on the road to the Omati Logging River Dump Camp. They also transit through A'a passage and have fishing camps above and below the Omati River ROW Landfall.

#### Issue 8.1: Entitlements

They asked about compensation or not accessing fishing areas, and for damages done to the TFI road 6 by Spiecapag. They also raised that TRI has not compensated them for pollution into their river.

#### Issue 8.2: Social and Environmental Impact

They asked if they were edible for community projects, highlighting in particular the need for water tanks, phone coverage from the digicel tower that has been put up, elementary schools, community meeting halls and health services. They felt that PNG LNG project only pays compensation but does not provide community projects like TFI does.

#### Issue 8.3: Operations

They raised concern on road safety and the driving behavior of project vehicles.

<b>MEETING DESCRIPTION</b>	Omati-Keiyu
<b>VENUE</b>	Omati
<b>DURATION</b>	8 September, 2011
<b>PARTICIPANTS DESCRIPTION</b>	90 Participants 46 Male; 44 Female;
<b>PARTICIPATION DESCRIPTION</b>	

Category	Questions/ Issues Raised
<b>Entitlements</b>	Will we get any compensation for our fishing camps that are along the Omati River and our lack of access to A'abario during construction closures?
	He claimed that damages done by Spiecapag on the TFI Road 6 has not been compensated for yet. Threatened to remove Spiecapag Guard House if no payment within the week.
	Claim that TFI Project has been polluting their river by discharging oil spills/diesels on countless occasions. Our river is polluted. When the issue was raised with TFI they brought in their police and were told that if they had a problem with them than they should get a lawyer to fight their battles.
<b>Social &amp; Environmental Impact</b>	Due to lack of economic services we moved from Omati Village to Keiyu Road 6. Traditionally we use the Omati River for fishing and going to Kikori through A'a bari Passage. Are you going to consider any community projects for Keiyu?
	The headwaters of the river running next to the village is next to the Spiecapag Security Gate for the access road to the Omati landfall and Road6 to Kikori. Our drinking water is affected by the Speicapag trucks driving along this road, the oil and extra mud into the creek is not good for us. We would appreciate help in this, for instance supplying us water

Category	Questions/ Issues Raised
	tanks to avoid using the river water as drinking water. It rains alot here so we think watre tanks are fine for us.
	We need the communication services from the Digicel Tower that Spiecapag has put up at Kopi Scrapper Camp. Please raise this concern.
	As a remote community here we need services such as Elementary Schools, health , community meeting halls and a church building for the community. Please consider our needs.
	When Turama Forest Industries were in the area, they paid compensation as well as provide ongoing transportation to each village to help them get to klkori. I see that PNG LNG only pasy compensation and does nothing-else.
<b>Operations</b>	Vehicles on this road are speeding and not thinking about our safety. Can the drivers slow down?
	Expressed concern over speeding vehicles, there was an instance when she was going to Scrapper Camp with her sick child and husband. Along the way they were splashed with mud from a speeding vehicle that belonged to SpieCapag. Her husband approached the driver and told him that what he did was not right and that he must not speed and always slow down when approaching pedestrians

### 9. Babaguna Village Meeting

#### Issue 9.1: Entitlements

Concerns were raised over employment. They stressed that jobs during the construction should only go to members who have signed the IPCA.

#### Issue 9.2: Social and Environmental Impacts

They raised questions around how they would be compensated during construction for impacts such as use of the water for fishing and making sago; and whether the compensation will sufficiently cover this in the short term. They asked if any food, water or water tanks will be supplied during that period.

The main concern is also with the barramundi along the Goro section of the waterways, it is important that the area is not damaged. They asked if there were any other environmental impact that the project foresaw as happening in the area. They also raised concerns about future impacts after construction and whether they will be compensated for these. The pastor requested if the project could assist with building a memorial to James Chalmers as a community project.

#### Issue 9.3: Operations

The group complained that the fisheries team needs to use people from the respective areas to monitor fishing grounds in their own area and not just the Kerewo's. There were also concerns with the speed at which the VLO travels on the waterways. They said this has created an accident before and needs to be managed.

They also wanted to know more about whether the gas in the pipe would leak.

<b>MEETING DESCRIPTION</b>	Babaguna Village Community
<b>VENUE</b>	Babaguna
<b>DURATION</b>	9 September, 2011
<b>PARTICIPANTS DESCRIPTION</b>	250 participants 55 Men; 54 Women; 141 children
<b>PARTICIPATION DESCRIPTION</b>	

Category	Questions/ Issues Raised
<b>Entitlements</b>	Clan Leader: Ae'dio living in Babaguna: In the four months of construction, where jobs are available, Saipem must only employ people within the IPCA's signed with EHL.
<b>Social &amp; Environmental Impact</b>	In the four months of construction, we cannot use the waterways for fishing and making sago. We will be deprived. How will the Project compensate us for deprivation and is the money we signed for enough to cover all the damages? I am asking because of the history with sandbanks occurring in the Kikori River after the oil pipeline was laid. How will the Project account for future impacts?
	United Church Leader: My request is that in memory of James Chalmers who died on Goaribari Island on 8th April 1901, that the Project erects a Memorial. For me I served the United Church 31 years, with little to no pay. Can the Project help me financially, if not me then help the United Church in Kikori with a new church building?
	The main breeding areas for barramundi are along the Goro section of the waterway. Dredging along the River must be aware of this and make sure those areas are not affected
	Will the project /Project supply us food stuff during the period the construction is going to take place because we will be cut off from excessing our sagos/fish etc?
	The project is going to be working in our river and will be any environmental impact on the river?
	We use the water to wash, eat and cook. If it will be spoilt by the construction so can the Project provide us water tanks?
<b>Operations</b>	The fisheries team monitoring program should use people from Goro to record fish along the section of the River where Dopima people have been placed. This is to maintain clan boundaries and not cause unnecessary headache for clans along the waterway.
	Bisi people are complaining that the Fisheries team is using people from Goare to monitor traffic and fish at A'abari. The team needs to use people from Pai'a and Moinamo, not the Kerewo's from Goare Village.
	Kaba of Babaguna village complained that Kenneth Korokai's boat was travelling at high speed, created waves that capsized his canoe on September 2nd, 2011 at Gaibo. Kenneth was travelling with officers.
	Will the gas leak?

## APPENDIX 3: SOCIAL AND CULTURAL BACKGROUND

### Physical Environment

The Kikori region is within Gulf Province, which occupies some 13,500 km<sup>2</sup> on the south coast of mainland Papua New Guinea, where the estuaries of six major rivers converge into one large delta of islands, swamps and channels. Average annual rainfall varies from 1300 mm near Kerema, to over 5,000 mm in the upper Kikori Valley. Altitude varies from sea level to over 2,700 m on the Morton Peaks north of Kaintiba. The Gulf has only two districts: Kerema and Kikori, with an estimated population of 106,898. Its rural population constitutes some 2% of the national rural population.

The region lies within the southern margin of the Papuan Fold Belt. Volcanic informs are prominent and comprise erosional volcano remnants and associated low-lying knolls. Coverage of the area largely consists of mixed swamp forest. Canopy includes *Camptosperma*, *Terminalia*, *Nauclea*, *Syzgium* and *Alstonia* trees. In the southern most reaches of the region are isolated patches of brackish swamp containing mostly *Nypa* palms. At the lower reaches of the proposed gas pipeline are the deltas of the Kikori and Omati Rivers—a vast mosaic of verdant swamps and plains transacted by the muddy waters of rivers draining the central cordillera.

Population densities range from 25–35 persons/km<sup>2</sup> in the most densely settled areas to less than 10 persons/km<sup>2</sup> in other areas. Most of the province west of Kerema is unoccupied with small scattered settlements along rivers and coast. Outboard motor boat and canoe are the major forms of transport around river areas.

The Gulf is a relatively poor province in PNG, with only minor marketing of fish, betel nut, and coffee. Royalty payments from oil and logging are the major sources of non-agricultural income in the area. Sago is the most important food in the Kikori catchment supplemented by low intensity sweet potato and mixed staple cultivation. In the Kikori environs the people are far more dependent on sago, crabs and fish than their Kutubu neighbors.

“Overall, people in Kikori District are moderately disadvantaged relative to people in other districts of PNG. There is no agricultural pressure, land potential is low, access to services is moderate and cash incomes are moderate” (Hanson, Allen, Bourke & McCarthy 2001:47).

### Social Environment

The pre-contact history of the Gulf area suggests initial settlement in the region of between 2000 to 4000 years ago with perhaps migration from the northern Sepik region. Although there is no consensus about where or when the Gulf populations actually arrived, oral history accounts and village migration patterns suggest a gradual movement from inland north and north-western communities southwards along the major rivers of the Newberry, Omati and Kikori.

Settlements in the pre-contact era were situated along inland creeks, on top of karst hills or nestled in the karst escarpment. This was before government induced resettlement after which village populations clustered in communities along the Kikori River bank areas. Kerewo settlements were never inland but always along the Omati or Goaribari coastline.

The impacted area is inhabited by a number of ethnic groups:

- **RUMU** (Kairi) are located at Ogomabu, Morere, Irumuku and Kopi. Ethnic subdivisions include the Sirebi Kairi and the Omati Kairi. Rumu people have conventionally come under a conglomerate of groups referenced as Kairi.
- **IKOBI** (Kasere, Omati, Ikobi Kairi) are Kasere-speaking peoples and say that their clans are divided into two sub-tribes, Kobera and Baregewa.

- **POROME** (Kibiri), are clustered near Veiru creek, and the villages of Doibo, Veiru and Babaio. It appears Kibiri were settled originally at villages south of Veiru, having moved in the post-contact years slowly northwards closer to Kikori Station. Historical data suggest they previously gardened close to Bisi and ceded land to the Pai'a Kerewo in that area.
- **KEREWO** are originally from Goaribari Island but now also inhabit the eastern and western banks of the Omati River. They are divided into two distinct groups known as Pai'a (located in Bisi) and Otoia Kerewo (located at Goare, Dopima, Kemei, Mubagoa, Aidio, Samoa, Babaguina and Do'humu).

The tribal name Kerewo was adopted from the village of the same name (Haddon 1918; Ryan 1913) that lay previously at the northerly point of Goaribari Island. It was traditionally called Otoia (Figure 1.2). This was a centre of dispersal to mainland sites in the first phase, and thence to Babai, Samoa, Babaguina and Do'humu in a second migratory phase.

The full history of this dispersal is given in Goldman (1998). Suffice here to say that the population split between Pai'a Kerewo (now at Bisi) and Otoia Kerewo (dispersed) has left deep-rooted divisions.

### Population and Demography

The following Figure provides an approximate estimation of Kikori cultural populations. The Kikori catchment contains approximately 10% of the overall Project landowner constituency.

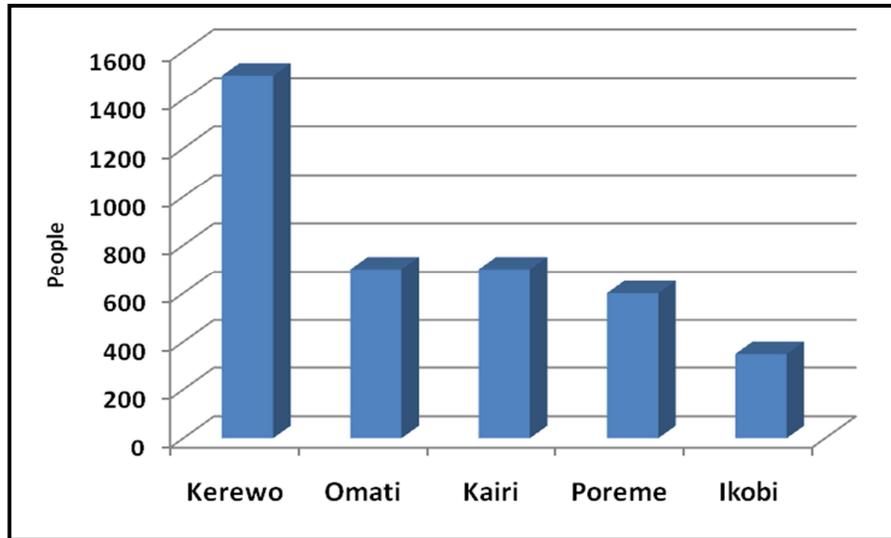


Figure: Omati Ethnic Group Populations

The following Table provides some demographic data for the immediately impacted Omati villages.

Table: Project Impact Area Households, Population<sup>4</sup>, ILGs and Survey Status

No	Ethnic Groups – Census Units	POP. 1990 Government Census	No. of HHs 1990 Census	POP. 1994 Census Chevron	POP. 2000 Gov Census	No. of HHs 2000 Censu s	No. of ILGs 2005	Households Surveyed—SIA 1998–2007				
								1998	2001	2004	2005	2007/2008
Kikori catchment PNG 2000 Census												
	Rumu (Kairi)											
1	Kopi	191	32	286	314	88	16	10	10	-	29	60
2	Kikori	195	30	-	587	69	-	-	9	-	12	151
	Kibiri											
3	Veiru & Babeo	76	9	204	74	8	39	11	6	-	6	9
4	Babeo	-	-	-	135	26	-	-	-	-	6	28
	Kerewo											
5	Bisi	125	29	498	219	45	15	20	25	-	9	28
6	Kemei	100	14	98	-		2	6	-	-	-	-
7	Goare	133	19	96	62	12	6	11	3	-	5	19
8	Samoa	135	16	252	251	32	5	7	10	-	-	14
9	Dopima	27	12	89	38	9	7	1	5	-	3	-
10	Ai'ido	18	6	51	47	10	2	5	15	-	1	9
SMLI Fieldwork Estimates May 2011 – Kerewo Villages												
9	Dopima					2						
7	Goare					30						
10	Ai'ido					15						
11	Mubagoa					10						

### Linguistic Identification

Culturally and linguistically the Kikori people form part of a large south-coast cultural catchment quite distinct from the Highlands and Lowlands Bosavi neighbors. For the people themselves, there is a high degree of mutual intelligibility between the various languages that may not have been there in the past, but has occurred because of linguistic intermixing.

Dutton's (1982) hypothesis on these Kikorian languages is essentially that there is evidence of heavy borrowing from East Austronesian languages to non-Austronesian languages like Elema. In other words, the trade routes from East to West, along which Hiri expeditions ventured, also define a vector of linguistic transmission.

### Migration History

Early European accounts go to some lengths to point out that the delta villages generally were very large, unlike those found further inland, with populations typically estimated at 1000–2000 people (e.g., Ryan 1913) in contrast to the typical <100 people found further upstream (e.g., Cawley 1925; Flint 1923; Liston-Blyth 1929; MacGregor 1894a; Murray 1914:10; Ryan 1914:170, 172; Woodward 1920).

<sup>4</sup> Based on PNG Government 2000 census.

The first European account of villages in the Kikori and Omati Rivers delta was made on 29 May 1845 during the surveying voyage of Captain Blackwood in the H.M.S. Fly. Later commentators such as Ryan (1913), Woodward (1920) and MacGregor (1893) all similarly report the existence of much larger villages in the Kikori and Omati village deltas.

The archaeological evidence indicates that the emergence of large villages was in line with the development of regular large-scale trading in this locale as linked some 500 years ago to Motu Hiri trade. Indeed, it is not even known if the island of Goaribari and the other delta islands existed at the time of the earliest known Aird Hills and mid Kikori River villages around 1800 and 1500 years ago respectively.

That this swampy delta environment was less than ideal for human occupation is supported by Haddon (1918:177), who states that, 'Owing to the swampy nature of the country they [Kerewo] have poor gardens'. By strategically placing themselves at the mouth of the Kikori and Omati Rivers the Kerewo were able to control trade items flowing to the north as 'middlemen.'

Out-migration from villages for purposes of education and labor has been a component of Lower Kikori social life since the earliest days of colonial presence. This has led to a division between (a) primary residential locations—those villages located close to Kikori Station; and (b) peripheral residences—those located for the most part in pre-colonial locations on traditional land, such as Dopima, Goare, Ai'idio, Kemei, Bebei and Mubagowa which now have only skeletal populations of around 30–80 people.

The post-contact history witnessed a truly dramatic change in settlement patterns. The periodic shifts between riverine and inland hamlets is at a much lower level than previously with a marked clustering of people close to the Kikori government station. In effect the period has witnessed a migration reversal northwards up the Kikori River. This is illustrated in Figure 1-2 above which shows some settlement history and migration for the Omati basin area around the proposed PNG LNG Project pipeline. Most, if not all, of the presently occupied villages were established only during the last 100 years (the members of which resettled from other parts of the study region and beyond).

The Kerewo have a markedly different colonial history than do the other project area groups in the Gulf Province. They have undergone what amounts to a wholesale dispersion from their original home area of Goaribari Island/Omati River mouth and many now live on land that is not traditionally Kerewo tribal land—some have been doing so for over 70 years. They have not, however, relinquished ownership or control of their ancestral lands. The social impact of almost a century of dispersion has had profound effects on their clan system.

The essential message of this history and demographic overview is that the present disposition of people on land has evolved in response to both pre-colonial and post-colonial catalysts. Only skeletal populations remain along the Omati River channel following a major diaspora north to Kopi and other Kikori villages.

Landowners with interests in the pipeline right-of-way are not clustered in discrete villages, but rather spread across the region. Moreover, because of the historical diaspora, it is likely that compensation claimants will emerge with arguments that indicate their genealogical footprint in the area, and contest other groups' versions of the history of settlement.



## Subsistence Livelihoods

The rainforest and waterways of the Gulf abound in diverse species (37 ethno-zoological species are recognized), which provide a primary reservoir of regularly consumed protein. The main limitations are not availability but accessibility due to seasonal flooding. Riverine resources are still used by women and men, providing at least 22 ethno-zoological species of fresh and salt-water fish, eels, turtles, crayfish and prawns. Commercial nylon nets have largely replaced the old bamboo and bark cord. These nets are set at doline ponds and large and small inlet creeks around Omati and Goaribari environs.

There are three distinct forms of subsistence land use:

- **Sago-Palm Cultivation:** Average yields in the order of 100 to 150 kg per palm, so that a single palm is usually sufficient for a family for a month. Palm by-products are used for roofing and building. Palm strands are subject to group ownership, but exploitation is usually in the hands of individual families or people. Both males and females inherit rights to trees. Land ownership can be altered immutably through purchase, and usufruct rights can be granted for limited periods. In effect, one has communal clan lands within which individuals hold a portfolio of rights to tracts inherited through kinship and/or descent.
- **Swidden Gardening:** The gardens evidence a wide variety of crops: pandanus (*pandanus conioideus*), breadfruit (*artocarpus altilis*), okari (*terminalia* spp.), Malay apple (*syzygium malaccense*) and various leaf greens (*Amaranthis* spp.). Non-subsistence plants are also cultivated like *Derris* sp. for fish poison, *Yaemi* for canoe logs, *Broussonetia papyrifera* for plaited carrying bags, *Nicotiana* for smoking and *Bambusa* spp. for cooking and water storage vessels.
- **Hunting, Gathering and Fishing:** Differs according to altitude:
  - terrestrial fauna, pig, cassowary, wallaby, bandicoot, hens, megapodes, rats, frogs;
  - lower canopy, phalangers, snakes;
  - high canopy, flying foxes, birds, hornbills; stream banks—rats, crocodiles, lizards, etc.

Various attempts to commercialize agriculture on a large-scale basis have proved unsustainable, and small landholders have generally focused their agricultural activities on subsistence production. Agricultural and livestock opportunities remain largely undeveloped due in part to lack of communications and transport infrastructure.

## Principles of Social Organisation

Traditionally, most of the Kikori communities had longhouse (dubu) villages often varying from 100 m to 300 m in length in which married men lived and which were surrounded by young men's houses and women's houses.

As was the case across the delta region, temporary encampments (kombati) were utilized for fishing and gardening and activities like collecting turtle eggs.

The social organisation of all the Omati peoples is based on patrilineal descent with a settlement pattern of villages divided into numerous agnatic descent groups. The generic term for these social groupings is respectively Gu (Kerewo), Gunu (Rumu Kairi) or Imai (Kibiri). At present, these terms are being used for any level of inclusiveness from the family to the tribe.



Plate: Longhouses in the village of Ai-idia, Goaribari

(from Papua Annual Report for the year 1918–19, photo 4)

These descent units are geographically dispersed, organizationally complex, and factionalized in part due to migration and past pursuit of Incorporated Land Group (ILG) status. What in fact has occurred is that people now use place name prefixes in front of their patronyms to indicate a differentiated line of descent. For example, those people who are members of Karuamio clan living in Bisi call themselves Bisi Karuamio. One also finds Karuamio in Goare, Dopima and Babai. Village leadership was generally ascribed and followed the principle of primogeniture, that is, leadership passes to the eldest descendant in the direct male line from the founder.

Most of the clans in the area recognize some totemic association, and frequently adopt names according to the position in the long house they traditionally occupied. For example, in Kerewo:

- *Tamu*, head of the house;
- *Goho*, middle of the house; and
- *Nupu*, back of the house.

This explains names such as *Nupu* Karuamio, *Goho* Karuamio or *Tamu* Karuamio. It also explains why we find the same agnatic group – e.g., Karuamio – in different villages. Genealogical accounts (Goldman 1998) show an average length of between four to six generations only for each clan. *Gu* obligations remain largely those of providing hospitality and refuge. Members of the same clan in multi-tribal villages continue to live in close proximity to each other.

There is little doubt that the social system is more fragmented than was traditionally the case. However, in this region of constant shifts and migration, it is difficult to quantify this trajectory in terms of ongoing changes, what is and what is not specifically a result of the oil projects and associated membership schemes such as ILGs. The fact that people retain clan names is indicative of the persistence and enduring nature of descent line affiliation.

## Land Ownership

Having sustained contact for over a century, longhouse communities are now a rarity with most villages comprised of co-residential units. These communities have a multi-clan composition and in some cases multi-tribal constituency. In the Kopi-Omati catchment, as is the case in the Kutubu project area, although the local clan holds underlying communal title to clan land, individuals within the clan exercise exclusive rights over land during their lifetimes and have the right to pass on such exclusive rights to their sons.

Although 'in theory' there may be 'unallocated clan land' within a local clan's territory, in practice, with the possible exception of hunting areas, most land is appropriated by individual men and their sons and these smaller lineages become the effective thread of transmission of rights in land over time.

Sago palm stands are subject to individual ownership outside the family area—both males and females inherit rights in any clan land to particular trees or plots or groves. Usufructuary rights are granted for specified durations (rights to canoe trees, game, bush pond, etc.). People are not always sure whether there is such a thing as unallocated land owned communally by the local clan. This may reflect upheavals in the social system engendered by migration, resettlement and intermarriage with distant tribes with different customs.

Some informants said that in early times, no one individual owned land, which is consistent with the allodial (communal) nature of land holding in the classical Papua New Guinea social systems. Now that money and resource benefits have arrived, there is a desire on the part of people to assert individual prerogatives and ownership of property and this has

## Territoriality and the 'Waterways Issue'

Waterways generally are 'not regarded as any person's or clan's property but rather constituted public thoroughfares in traditional custom' (Goldman and Tauka 1998:47).

The cultural view is that passage in the river is always for a reason – commuting, fishing or gardening on/in someone else's water or land. The concept of free passage as an abstract notion has little meaning for the Kerewo's, as passage through waters for which a village and its clans have care must always be to do something (not just pass).

In the *tumbuna taim* (i.e., remote past) the only reason people would want to pass would be to take and use resources, such as fish and crab, in someone else's water, or perhaps sago from someone else's land. So, if passage was and is necessary, having a necessary link with usage of another's resources, the passer must:

- Contact the gu with which he has a link (one of the same name or into which a female relative has married);
- Call on, stay with and present a gift or gifts (usually of another form of food) to the gu (clan); and
- Then go out with gu relatives to fish (or harvest from the garden or sago tree(s)).

Passage is permissible provided that:

- The resources used are owned by a related clan (gu);
- Correct protocol has been followed by visiting the owners and exchanging food/gifts for use of the resources—e.g., fishing in the river; and
- Simple commuting is not subject to these conditions. Weiner thus noted, "Waterways are not owned by any clan and are considered common space for the people of the tribal area—though trespasses by foreigners into home waters were probably vigorously and actively policed" (2006).

The distance into the Papuan Gulf Kerowo would claim they traditionally fished and regard as 'customary land' is 5 kms out from the shoreline:

- This is as far as traditional craft could safely navigate from Goare;
- The area within which the Kerowos and Morigi Islanders used to fight—it is now claimed to be a burial site;
- According to legend Goariabri's south coast was much further south than it is now—so 'sea' was 'land' previously.

The area between Goare village and the five km limit is also one that both the Kerewo and the Morigi Islanders claim as a burial ground. As traditional enemies before the Australian administration, the Morigis would typically raid the village of Kemei, so their story goes, and would be met with Kerewo resistance from Kemei, Paidai and Mubagowa. The claim is that both groups were frequently blown across the sea pipeline area in battle, with members of both tribes dying into the sea as their final resting place.

Further, the Kerewo also claim that their grandfathers have told them that in *tumbuna taim* (ancient times) Goaribari Island did go much further out into the Papuan Gulf than it now does. The provision of such a definite figure as 5 km is likely an artifice of contemporary readings of the O&GA legislation. The effective limit of marine use was delimited by the ability of canoes to stay close to land.

The limit was described to us by Goare villagers as the distance the river current would take them out to sea, coupled with the ability of the ocean tide to bring them back to within reach of land. In other words, 'distance' was never gauged as a quantitative measure, but rather referenced to tidal phenomena. It actually makes no sense to ask landowners 'how many kms out' did you travel? A crude estimate would be that 2–3 kms was the effective limit.

These issues, often referred to as the 'waterways problem', date back to Chevron Niugini and the petroleum project legacy.

1. In part, they derive from the longstanding grievances that sub-sea pipelines have created: increased and changed sediment levels making channel navigation difficult, blocking waterways and changing fishing conditions. The compensation paid by Ok Tedi Mining Limited to the Fly River landowners was seen in the Gulf as a precedent for Kikori River peoples' claims against Chevron Niugini. Hydrographic surveys that indicate the pipeline is not causing siltation—and that the changing levels are due to deposits from Highland river flows- are of no interest to Kerewo and related tribes.
2. National legislation agencies have claimed navigable waterways as the property of the state. Chevron Niugini considered itself to be bound by this legislation and therefore did not pay damage or deprivation compensation for the pipeline section on the river and the sea floor. It did pay for surface damage and deprivation of the use of the land route all the way to the riverbank. This problem is culturally very close to the Kerewo people who have fished these rivers, fought and died defending their rights probably for thousands of years.

Each Kerewo village has an area of the Omati River or Aumo channel for which its clans care. Their area of the river is an extension into the water, running off their particular land holding. Care for their part of the river water constitutes knowing everything that is there, the fish, the various spirits and their specific locations.