TOTAL E&P PNG LIMITED

PAPUA LNG

Upstream Environmental Impact Statement

Volume 2: Environmental and Social Baseline

Part 17
Upstream Cultural Heritage and Archaeology Baseline Report

TOTAL
TOTAL E&P PNG LIMITED

Papua LNG Project

Total E&P PNG Limited

Upstream Cultural Heritage and Archaeology Baseline Report

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Dr Robert Skelly in collaboration with Social Research Institute

Table of Contents

Chapters

Executive Summary **1**
1. Introduction **3**
1.1 Project Overview 3
1.2 Study and Objectives 4
2. Regulatory Framework and Standards **5**
2.1 Papua New Guinean Authorities and Legislation 5
2.2 International Standards and Guidelines 5
2.2.1 International Finance Corporation 5
2.2.2 International Council on Monuments and Sites (ICOMOS) and the Burra Charter 6
2.2.3 World Archaeological Congress Code of Ethics 7
2.3 TOTAL Company Standards and Commitments 8
2.3.1 Social Baseline Study General Specification 8
2.3.2 Charter of Principles and Guidelines Regarding Indigenous and Tribal Peoples 8
3. Study Area **9**
3.1 Project Area of Influence 9
3.2 Study Area 9
4. Existing Information **13**
4.1 PNG National Site Register 13
4.2 Prior Studies within the Study Area 13
4.2.1 Ethnography 13
4.2.2 Archaeological Research in PRL-15 and Northern Sections of the PAOI 13
4.2.3 Archaeological Research in Orokolo Bay 14
4.3 Predictive Modelling 16
4.3.1 Geographic Processes 16
4.3.2 Archaeological Studies in Neighboring Regions 18
5. Approach and Study Methods **21**
5.1 General Approach 21
5.2 Field Surveys 22
5.3 Definitions 23
5.3.1 Tangible Cultural Heritage 23
5.3.2 Intangible Cultural Heritage 23
5.3.3 Archaeological Sites 24
5.3.4 Oral Tradition Sites 24
5.3.5 Ancestral Heirlooms 24
5.4 Permits Obtained 24
5.5 Limitations 24

6. Baseline Characterization 27
6.1 Cultural Heritage Values in the PAOI 27
6.1.1 Tangible Cultural Heritage Values 34
6.1.2 Intangible Cultural Heritage Values 39
7. Conclusions 47
7.1 Tangible Cultural Heritage Values 47
7.1.1 PRL-15 47
7.1.2 Riverways 47
7.1.3 Export Pipeline Corridor (Orokolo Bay) 47
7.2 Intangible Cultural Heritage Values 48
8. Study Team 49
9. Abbreviations 51
10. References 53

Tables

Table 5.1 Location of Cultural Heritage Consultations 23
Table 6.1 Tangible Cultural Heritage Sites and Materials 30
Table 6.2 Importance Ratings for Ancestral Village Sites 36
Table 6.3 Importance Ratings for Tangible Spirit Sites 37
Table 6.4 Intangible Cultural Heritage Values 39

Figures

Figure 3.1 Upstream Project Area of Influence (PRL-15) 10
Figure 3.2 Upstream Project Area of Influence (Export Pipeline Corridor and Riverways) 11
Figure 3.3 Upstream Language Groups 12
Figure 4.1 Prehistoric Sites in the Purari River (Wabo) Area 14
Figure 4.2 Popo Site Location Map 15
Figure 4.3 Land Systems in Orokolo Bay 18
Figure 6.1 Tangible Cultural Heritage Sites (PRL-15) 28
Figure 6.2 Tangible Cultural Heritage Sites (Export Pipeline Corridor and Riverways) 29

Plates

Plate 4.1 Excavations at Popo 16
Plate 5.1 Man Displaying Cultural Materials during Community Consultations (Kaevaria Village) 21
Plate 6.1 Traditional Dress and Dancing (Kaevaria) 43
Plate 6.2 Traditional Dress (Evara) 44

Appendices

Appendix 1 NMAG Permit for Cultural Heritage Mapping

Appendix 2 Results from National Site Register Record Search

Appendix 3 Ethnographic Background to the Study Area

Appendix 4 Formally Documented Cultural Heritage Sites

Appendix 5 Cultural Heritage Consultations

Executive Summary

Joint venture partners, Total E&P PNG Limited (TEP PNG) (40.13%), ExxonMobil (XOM) (37.03%) and Oil Search Limited (Oil Search) (22.84%), are currently planning the development of the Elk-Antelope gas field, which is located in the Gulf Province, Papua New Guinea. The gas fields are located within Petroleum Retention License 15 (PRL-15). The Project will include infrastructure development inside PRL-15, and the construction of gas and condensate pipelines (export pipeline) to an LNG Plant site at Caution Bay, 20 km northwest of Port Moresby. TEP PNG, a wholly owned subsidiary of TOTAL S.A has the largest interest in the Elk-Antelope gas field and is the operator of the Papua LNG Project (the Project) on behalf of the other joint venture partners.

The local study area, or project area of influence (PAOI), for the Upstream Cultural Heritage and Archaeology Baseline Report includes land and communities anticipated to be affected by Project infrastructure, facilities and associated activities within PRL-15, the onshore export pipeline and the Purari River tributary riverways.

In this baseline study, cultural heritage values in the study area are characterized based on the results of cultural heritage mapping surveys carried out in consultation with senior key informants representing 34 village communities resident inside the PAOI. The methods used were a combination of interviews, group discussions and physical site inspections. During consultations, key informants (senior community representatives with detailed knowledge of cultural heritage sites and values) were invited to discuss and describe their community's tangible and intangible cultural heritage sites and values. Cultural heritage mapping was conducted by National Museum and Art Gallery of Papua New Guinea (NMAG) approved archaeologists John Sepe (Social Research Institute) and Dr Robert Skelly.

The Upstream Cultural Heritage and Archaeology Baseline Report complies with the requirements of Papua New Guinea legislation enshrined in the *National Museum and Art Gallery Act 1992*, *National Cultural Property (Preservation) Act 1965* and National Cultural Property (Preservation) Regulation 1965. The report adheres to the requirements of International Finance Corporation (IFC) Performance Standard 1, Assessment and Management of Environmental and Social Risks and Impacts and Performance Standard 8, Cultural Heritage and associated guidance notes (IFC, 2012). Cultural heritage mapping was conducted adhering to the authority and regulations of Cultural Heritage Mapping Permit (Number 001) issued by NMAG.

A search of the National Site Register maintained by NMAG showed that just one archaeological site has been previously recorded inside the PAOI. In the 1970s prior to a proposed dam project, seven weeks of archaeological surveys in PRL-15 and surrounding areas failed to identify any archaeological sites that are inside PRL-15 or the PAOI. Archaeological research in the export pipeline corridor has been limited to small investigations at the Popo site in 1976, and again in 2015 by a Monash University research team. The Popo site has attracted attention from archaeologists because of the sites description as an important ancestral village site in pioneering anthropological accounts of social organization in Orokolo Bay. Archaeological and geographic research are cited in the baseline characterization demonstrate that the coast has been moving (prograding) southward at rates of approximately two meters annually for the past few thousand years. As a consequence, former beach-fronting ancestral village sites may now be found on old beach dunes many kilometers inland from the present-day coastline.

Tangible cultural heritage values are defined as values that have a physical presence that can be seen or touched and include archaeological sites where physical remains of past cultural activity are present (e.g. pieces of pottery or shell on the ground surface), landscape features such as hills, caves and river mouths, individual trees or stands of vegetation or other landscape or biogeographic manifestations of spiritual, sacred or ritual significance. Intangible cultural heritage values do not have a physical presence although tangible sites are often imbued with intangible cultural heritage values. Intangible cultural heritage values are manifested in language, oral

traditions, traditional craftsmanship, knowledge of nature and the universe and other forms of ancestral knowledge passed from generation to generation.

The documenting of tangible cultural heritage sites was limited by difficult and hazardous terrain as well as issues of confidentiality maintained for social or local political purposes. As a consequence of confidentiality constraints, there are almost certainly cultural heritage sites in the PAOI known to communities that were not reported during consultations. Informants may have chosen not to divulge information about sites known to them because of for example; conflicting claims to land, tensions arising out of reconciling traditional and Christian perspectives, or for reasons related to clan affiliations or gender.

The cultural heritage and archaeology baseline characterization includes descriptions of 12 tangible cultural heritage sites that were formally recorded during cultural heritage mapping. In addition, an important cultural heritage site given the project name ‘PRL-15 oxbow wetlands’ was documented based on oral testimony. The PRL-15 oxbow wetlands could not be visited due to logistical constraints; however, an accurate location for the site was determined using aerial imagery. The tangible sites that were formally recorded are a representative sample of the site types that are present inside the PAOI; ancestral village sites, spirit sites, women’s sites, archaeological sites and ancestral heirlooms.

Fifteen types of intangible cultural heritage values are discussed under six classifications; language, ancestral oral traditions, spirit/sacred oral traditions, song/dance and traditional dress, traditional subsistence knowledge and traditional medicines.

1. Introduction

1.1 Project Overview

Joint venture partners, Total E&P PNG Limited (TEP PNG) (40.13%), ExxonMobil (XOM) (37.03%) and Oil Search Limited (Oil Search) (22.84%), are currently planning the development of the Elk-Antelope gas field, which is located in the Gulf Province, Papua New Guinea. The gas fields are located within Petroleum Retention License 15 (PRL-15). The Project will include infrastructure development inside PRL-15, and the construction of gas and condensate pipelines (export pipeline) to an LNG Plant site at Caution Bay, 20 km northwest of Port Moresby. TEP PNG, a wholly owned subsidiary of TOTAL S.A has the largest interest in the Elk-Antelope gas field and is the operator of the Papua LNG Project (the Project) on behalf of the other joint venture partners.

The Elk-Antelope field, located within Petroleum Retention License 15 (PRL-15), is a significant gas discovery in Papua New Guinea consisting of a gas reservoir with several trillion cubic feet of gas reserves located approximately 120 km inland from the township of Kerema, and 340 km northwest of Port Moresby.

The Project will comprise upstream production well development and associated infrastructure at the gas field within PRL-15, construction of an upstream central processing facility (CPF) and delivery of gas and condensate via onshore and offshore export pipelines to a LNG Plant site at Caution Bay, Central Province, 20 km northwest of Port Moresby. The design life for the Project will be 25 years.

The Project area comprises the physical footprint of the various Project components and associated infrastructure as detailed below.

- Production, processing and related facilities (within PRL-15):
  - Wellpads and the associated gathering system (including flowlines and trunkline).
  - Central processing facility (CPF) incorporating an acid gas removal unit (AGRU).
  - Logistics base and offloading facilities, accommodation camps, airstrip, roads and bridges.
  - Quarries, communications infrastructure.
  - Initial section of the onshore export pipeline.
- Onshore pipeline (outside PRL-15):
  - Remainder of the onshore export pipeline to landfall on the Gulf coast including valve stations.
  - Laydown areas, camps.
  - Quarries, communications infrastructure.
- Transport (river) corridors:
  - River transport routes— the Purari, Ivo-Urika and Wame-Varoi rivers.
- Offshore pipeline:
  - Offshore section of the export pipeline to a LNG Plant site.

Initially, the Project will focus on exploiting the Elk-Antelope reservoirs via one to three production wellpads on Antelope and one production wellpad on Elk. Gas and condensate will be transported from the CPF and delivered to a LNG Plant facility at Caution Bay located on the southern coast of Papua New Guinea.

1.2 Study and Objectives

This report presents results of cultural heritage studies undertaken by PNG National Museum and Art Gallery-approved archaeologists John Sepe (Social Research Institute) and Robert Skelly with communities in the Project area in the Kikori District (Gulf Province) during May-June and August 2016.

This report provides a baseline characterization of tangible and intangible cultural heritage values for the upstream Project area. The report aims to characterize the ethnographic and cultural heritage landscape of the local study area in order to provide guidance about the cultural heritage values that may be present in the Project area and to guide decision making by the developer so that damage to cultural heritage sites, materials and values can be mitigated or avoided.

2. Regulatory Framework and Standards

This Upstream Cultural Heritage and Archaeology Baseline Report has been designed to comply with the requirements of, and address issues identified within, the following national and international standards and operational guidelines:

- Requirements of Papua New Guinea legislation enshrined in the *National Museum and Art Gallery Act 1992*, *National Cultural Property (Preservation) Act 1965* and *National Cultural Property (Preservation) Regulation 1965*.
- International Finance Corporation (IFC) Performance Standard 1, Assessment and Management of Environmental and Social Risks and Impacts and Performance Standard 8, Cultural Heritage and associated guidance notes (IFC, 2012).
- The Burra Charter and World Archaeological Congress (WAC) Code of Ethics.
- TOTAL General Specification GS EP SDV101: Social Baseline Study (TOTAL, 2012) and Charter of Principles and Guidelines Regarding Indigenous and Tribal Peoples.

2.1 Papua New Guinean Authorities and Legislation

The National Museum and Art Gallery Act (NMAG Act) was enacted to provide a national entity charged with implementing pre-existing and subsequent cultural heritage acts and legislation. The PNG National Museum and Art Gallery (NMAG), through the NMAG Act, is required to maintain a register of cultural heritage and archaeological sites identified during planning and development and ensure that sites are not illegally damaged or destroyed. To meet this requirement the responsibility for the management of cultural property has been vested in the Trustees of the NMAG, under the National Cultural Property (Preservation) Act (NCPP Act).

The NCPP Act applies to pre-European-contact and European-contact sites on land as well as underwater/maritime archaeological sites. The NCPP Act covers ‘any property, movable or immovable, of particular importance to the cultural heritage of the country’ and ‘any object, natural or artificial, used for, or made or adapted for use for, any purpose connected with the traditional cultural life of any of the peoples of the country, past or present’.

Cultural Heritage surveys were conducted under the conditions described in Cultural Heritage Mapping Permit (Number 001) issued by NMAG (Appendix 1). The permit conditions allow for cultural heritage researchers to:

> conduct (a) oral documentation of spatial arrangements of cultural properties, and (b) cultural heritage landscape mapping.

Permit conditions do not allow cultural heritage researchers to “conduct archaeological surveys” and adhering strictly to permit conditions, no archaeological surveys were conducted during the field work conducted to enable the preparation of this report.

2.2 International Standards and Guidelines

2.2.1 International Finance Corporation

IFC Performance Standard 1, Assessment and Management of Environmental and Social Risks and Impacts, establishes guiding principles that are to be followed under all Performance Standards. This report draws on Performance Standard 1 and focuses specifically on the principles of IFC Performance Standard 8, Cultural Heritage. IFC uses comparable definitions for cultural heritage values to those adopted by United Nations Educational, Scientific and Cultural Organization (UNESCO). IFC Performance Standard 8 states that:

> For the purposes of this Performance Standard, cultural heritage refers to (i) tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or

> groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values; (ii) unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and (iii) certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles.

IFC Performance Standard 8 acknowledges two classifications of cultural heritage values. These are 'nonreplicable' and 'replicable'. Nonreplicable heritage is defined as:

> Nonreplicable cultural heritage may relate to the social, economic, cultural, environmental, and climatic conditions of past peoples, their evolving ecologies, adaptive strategies, and early forms of environmental management, where the (i) cultural heritage is unique or relatively unique for the period it represents, or (ii) cultural heritage is unique or relatively unique in linking several periods in the same site.

Replicable heritage is defined as:

> Tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archaeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.

IFC Performance Standard 8 also provides measures of site importance, identifying critical heritage as defined below:

> Critical cultural heritage consists of one or both of the following types of cultural heritage: (i) the internationally recognized heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes; or (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation.

Performance Standards 1 and 8 provide strategic guidance as to how critical, nonreplicable and replicable heritage should be managed and on the development of a project-specific chance finds procedure.

2.2.2 International Council on Monuments and Sites (ICOMOS) and the Burra Charter

The International Council on Monuments and Sites (ICOMOS) is a "non-governmental professional organization concerned with the philosophy, terminology, methodology and techniques of cultural heritage conservation" (ICOMOS, 2000). ICOMOS is closely linked to UNESCO and has played a key role in providing advice to UNESCO on cultural matters related to world heritage. The Burra Charter was adopted by ICOMOS in 1979 and later conceived as the Australia ICOMOS Burra Charter, 2013 (Burra Charter). The Burra Charter provides guidance and standards of practice for the management of cultural heritage and advocates a process for the management and preservation of cultural heritage values.

The Burra Charter process comprises three stages:

1) Define cultural heritage values and understand the significance of cultural heritage values through investigation and analysis.
2) Develop policy and formulate a management plan focused on retaining the significance of cultural heritage values.
3) Implement the management plan and then monitor and review the results of the plan.

The Burra Charter process advocates engagement with Indigenous[1] stakeholders at each stage of the cultural heritage management process.

The international standards and guidelines described above are maintained through adherence with internationally recognized best practice principles. The principles adhered to are those advocated by the World Archaeological Congress. These principles provide guidelines on how international standards should be applied in the preservation and maintenance of cultural heritage values.

2.2.3 World Archaeological Congress Code of Ethics

The WAC was constituted in its current form in 1986 and today represents the preeminent international body advocating ethical archaeological research and the preservation of cultural heritage values. WAC provides a set of best practice principles and rules for WAC members that are observed in the development of this report. The eight principles are (WAC, 1990):

1. To acknowledge the importance of indigenous cultural heritage, including sites, places, objects, artefacts, human remains, to the survival of indigenous cultures.
2. To acknowledge the importance of protecting indigenous cultural heritage to the well-being of indigenous peoples.
3. To acknowledge the special importance of indigenous ancestral human remains, and sites containing and/or associated with such remains, to indigenous peoples.
4. To acknowledge that the important relationship between indigenous peoples and their cultural heritage exists irrespective of legal ownership.
5. To acknowledge that the indigenous cultural heritage rightfully belongs to the indigenous descendants of that heritage.
6. To acknowledge and recognize indigenous methodologies for interpreting, curating, managing and protecting indigenous cultural heritage.
7. To establish equitable partnerships and relationships between Members and indigenous peoples whose cultural heritage is being investigated.
8. To seek, whenever possible, representation of indigenous peoples in agencies funding or authorizing research to be certain their view is considered as critically important in setting research standards, questions, priorities and goals.

The seven WAC rules adhered to are (WAC, 1990):

1. Prior to conducting any investigation and/or examination, members shall with rigorous endeavor seek to define the indigenous peoples whose cultural heritage is the subject of investigation.
2. Members shall negotiate with and obtain the informed consent of representatives authorized by the indigenous peoples whose cultural heritage is the subject of investigation.
3. Members shall ensure that the authorized representatives of the indigenous peoples whose culture is being investigated are kept informed during all stages of the investigation.
4. Members shall ensure that the results of their work are presented with deference and respect to the identified indigenous peoples.
5. Members shall not interfere with and/or remove human remains of indigenous peoples without the express consent of those concerned.

[1] The term ‘Indigenous’ as used in Regulatory Guidelines and Standards masks cultural diversity when used in reference to peoples living in the Project area. Therefore, the term ethnic group is used when referring to Indigenous peoples living in the Project area.

6. Members shall not interfere with and/or remove artefacts or objects of special cultural significance, as defined by associated indigenous peoples, without their express consent.
7. Members shall recognize their obligation to employ and/or train indigenous peoples in proper techniques as part of their projects, and utilize indigenous peoples to monitor the projects.

2.3 TOTAL Company Standards and Commitments

2.3.1 Social Baseline Study General Specification

Within its Sustainable Development framework, TOTAL has a social baseline study general specification (GS_EP_SDV_101) that describes the objectives, roles and responsibilities, process and reporting requirements for social baseline studies (TOTAL, 2014). The general specification states the social baseline study should provide information on:

- Cultural beliefs and expressions of stakeholders, indigenous, (but also where not recognized as indigenous), and a description of the status of cultural rights of project affected communities.
- Religious sites and their context.
- Local cultural or sub-cultural diversity, religions and traditions.
- Archaeological and architectural sites.
- Cultural aspects (the ‘dos and don’ts’, formal as well as informal), position of women in society, sacred or taboo places and objects, other traditions, etc.

2.3.2 Charter of Principles and Guidelines Regarding Indigenous and Tribal Peoples

TOTAL’s Charter of Principles and Guidelines Regarding Indigenous and Tribal Peoples reflects the principles of the International Labor Organization’s Indigenous and Tribal Peoples Convention (C169). The Charter states that TOTAL affiliates will:

- Dialogue with communities in order to understand their goals, needs, values and constraints.
- Communicate plans to indigenous groups through presentations and local meetings.
- Inform indigenous groups about the development of the project.
- Work with all stakeholders to ensure the overall impact of the project is considered positive.

3. Study Area

3.1 Project Area of Influence

The project area of influence (PAOI) is the area that is *likely to be affected* by the Project, its activities and its facilities that are *directly owned, operated or managed by the upstream Project (including by Project contractors)*. This definition includes *predictable direct, indirect and some associated and cumulative impacts* arising from the upstream Project, including indirect impacts on biodiversity and ecosystem services upon which affected communities' livelihoods are dependent.

The upstream PAOI (hereafter referred to as PAOI) encompasses the areas associated with development of the upstream Project including:

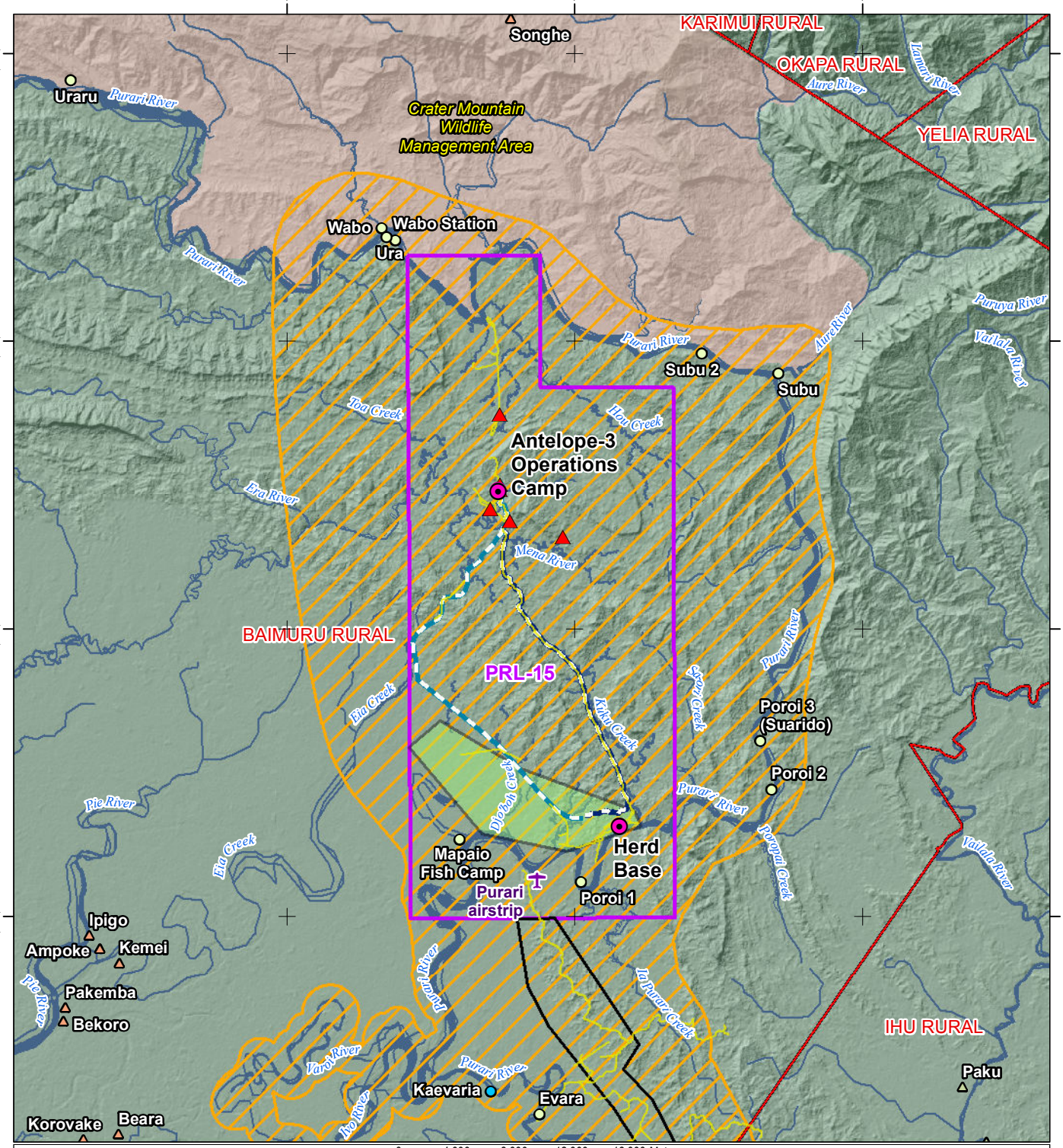
- Facilities, infrastructure and related activities within Petroleum Retention License (PRL)–15 including well pads and gathering system, trunkline, central processing facility (CPF), logistics base, airstrip, accommodation camps, wharf and access roads.
- Export Pipeline Corridor onshore and offshore between the CPF and LNG Plant site at Caution Bay.
- Riverways along which Project vessels will travel to and from PRL-15.
- Marine transport route between Caution Bay and the upstream riverways route to PRL-15.
- Associated developments and activities such as quarries/borrow pits, logistical wharfs/terminals not operated by the Project.

The boundary for the PAOI incorporates the communities and environment that are likely to be affected by the upstream Project and in doing so acknowledges the intricate link between the environment and the people who inhabit the area. Those people are dependent on the environment (land, air, water (fresh and marine) and natural resources) for their subsistence and as such any potential impact on the environment equates to potential impact on the livelihood and wellbeing of those people. The PAOI is shown in Figure 3.1 and Figure 3.2. Although not shown in Figure 3.1 and Figure 3.2 (due to scale) the provincial capital of Kerema is also considered to be within the PAOI, as it is likely that goods and services and workers will be sourced from or transit through this provincial center. Figure 3.3 shows the language groups represented in the PAOI.

3.2 Study Area

The upstream study area for the study comprises local and regional study areas.

The local study area corresponds with the PAOI described above and shown in Figures 3.1 and 3.2. The regional study area includes the relevant Provincial, District and Local Level Governments (LLGs). For the upstream study area this includes Gulf Province, Kikori District and Baimuru Rural and Ihu Rural LLGs.



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COORDINATE SYSTEM: PNG94 PNGMG94 Zone 55

Towns and Villages

Project Affected Communities
- PRL-15
- Riverways

Host LLG Communities
- Baimuru Rural
- Ihu Rural

- Tracks
- Local level government boundaries
- Waterways
- Waterbodies
- Upstream project area of influence
- PRL-15
- Crater Mountain Wildlife Management Area

Existing Facilities
- Base camp
- Purari airstrip

Proposed Facilities
- Wellpad

Trunklines
- Field Purari West Route
- Field Purari Central Route
- Notional development area of CPF
- Export pipeline corridor

N

Note, not all Host LLG Communities have been verified in the field.

TITLE: Upstream Project Area of Influence - PRL-15

FIGURE: 3.1

PROJECT: Papua LNG Project

DOCUMENT NUMBER: R_102-81556 **REVISION:** AA

DATE: 18/07/2017

DATA SOURCES:
Facilities, CPF area, export pipeline corridor, towns and villages, waterways, wellpads, tracks, PRL-15, hillshade supplied by ERIAS Group and TOTAL (2015-2016). Upstream project area of influence digitised by Mipela GeoSolutions based on data supplied by ERIAS Group (2017). LLG Boundaries from HDX and then spatially adjusted to align with background and coastal boundaries removed.

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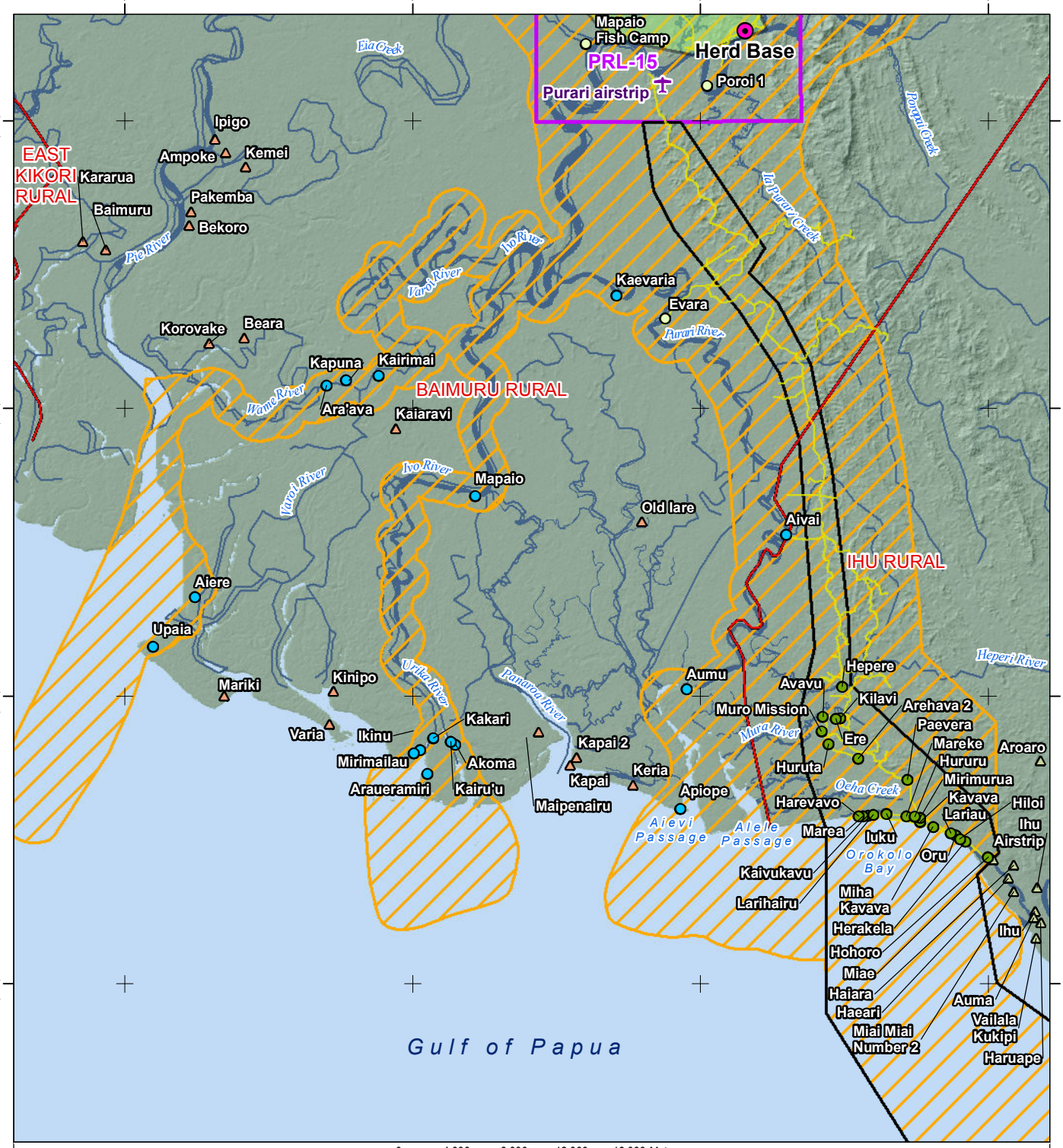

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COORDINATE SYSTEM: PNG94 PNGMG94 Zone 55

Towns and Villages

Project Affected Communities
- PRL-15
- Export pipeline corridor
- Riverways

Host LLG Communities
- Baimuru Rural
- Ihu Rural

- Tracks
- Local level government boundaries
- Waterways
- Waterbodies
- Upstream project area of influence
- PRL-15

Existing Facilities
- Base camp
- Purari airstrip

Proposed Facilities
- Notional development area of CPF
- Export pipeline corridor

N

Note, not all Host LLG Communities have been verified in the field.

TITLE: Upstream Project Area of Influence - Export Pipeline Corridor and Riverways

FIGURE: 3.2

PROJECT: Papua LNG Project

DOCUMENT NUMBER: R_102-81557 **REVISION:** AA

DATE: 18/07/2017

DATA SOURCES:
Facilities, CPF area, export pipeline corridor, towns and villages, waterways, tracks, PRL-15, hillshade supplied by ERIAS Group and TOTAL (2015-2016). LLG Boundaries from HDX and then spatially adjusted to align with background and coastal boundaries removed. Upstream project area of influence digitised by Mipela GeoSolutions based on data supplied by ERIAS Group (2017).

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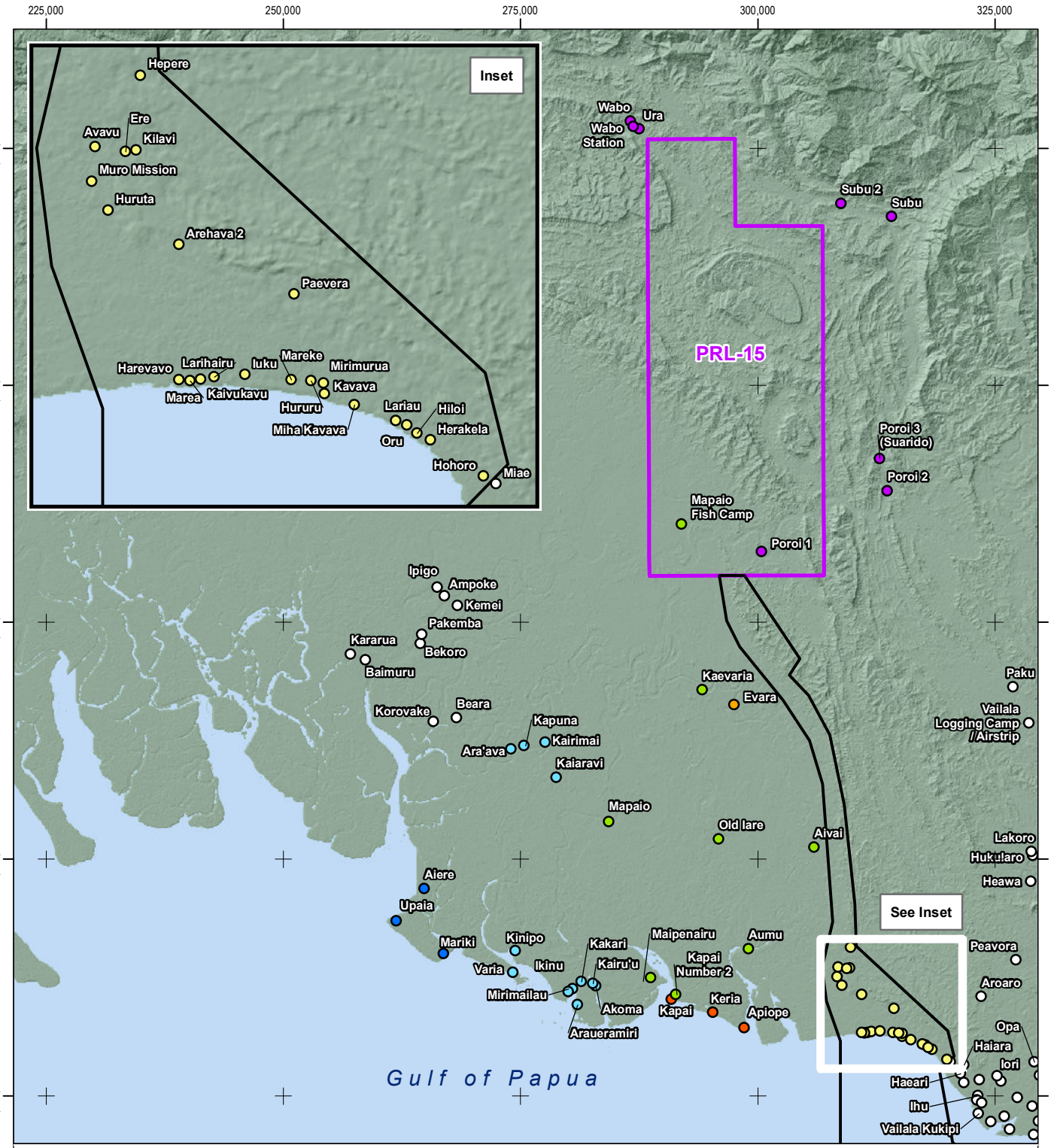

SCALE: 1:600,000 @ A4

0 6,000 12,000 18,000 24,000 Metres

COORDINATE SYSTEM: PNG94 PNGMG94 Zone 55

Language Group
- A - Pawaian
- B - Kaimare
- C - Koriki
- D - Iare
- E - Orokolo
- F - Ahia
- G - Maipua
- Not verified

Proposed Facilities
- Pipeline export route corridor
- PRL-15 License

N

**Note, not all communities have been verified in the field*
***Note, language group does not represent land ownership*

TITLE: Upstream Language Groups

FIGURE: 3.3

PROJECT: Papua LNG Project

DOCUMENT NUMBER: R_102-81555 **REVISION:** I

DATE: 18/07/2017

DATA SOURCES:
Language Groups, villages, rivers, tracks, PRL15, hillshade supplied by ERIAS and TOTAL (2015-2016)
LLG Boundaries from HDX and then spatially adjusted to align with background and coastal boundaries removed.

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4. Existing Information

4.1 PNG National Site Register

A search of the National Site Register held by NMAG identified 52 cultural heritage sites in the Gulf Province. Only one of these sites, Popo in Orokolo Bay, is in the study area (Section 4.2.3 and Appendix 2). The search included an investigation of archival records and maps and found no additional information pertaining to cultural heritage values in the study area.

4.2 Prior Studies within the Study Area

4.2.1 Ethnography

Seven languages belonging to the Trans-New Guinea family are spoken in the study area; Pawaia, Koriki, Iare, Ahia, Kaimare, Maipua and Orokolo (Figure 3.3). Pawaia-speakers occupy villages located in northern sections of the PAOI including PRL-15. To the south, villages on the Purari River tributaries are occupied by people speaking Koriki, Iare, Ahia, Kaimare and Maipua languages. The south-eastern section of the PAOI, where the export pipeline corridor meets the coast at Orokolo Bay is home to Orokolo language speakers. Although they speak the same language, Orokolo villagers self-identify to three separate groups. The northernmost group of villages (Huruta, Paevera, Ere, Kilavi, Avavu and Hepere) are in the Muro area, an area known locally as 'Inland Popo'. Beach-fronting villages in Orokolo Bay are divided into a western group comprising 'Coastal Popo villages' (Marea, Harevavo, Kaivukavu, Iuku and Larihairu) and an eastern group comprising 'Orokolo villages' (Mareke, Kavava, Herakela and Lariau). More about the ethnography of the area is provided in Appendix 3.

4.2.2 Archaeological Research in PRL-15 and Northern Sections of the PAOI

No archaeological sites have been recorded in PRL15 or northern sections of the PAOI. Pamela Swadling undertook the first archaeological surveys in the upper-Purari River area in 1975 and recorded just one archaeological site (NMAG site code OAO): a salt seep near Gurimatu some 45 kilometers northwest of PRL-15 and outside the PAOI.

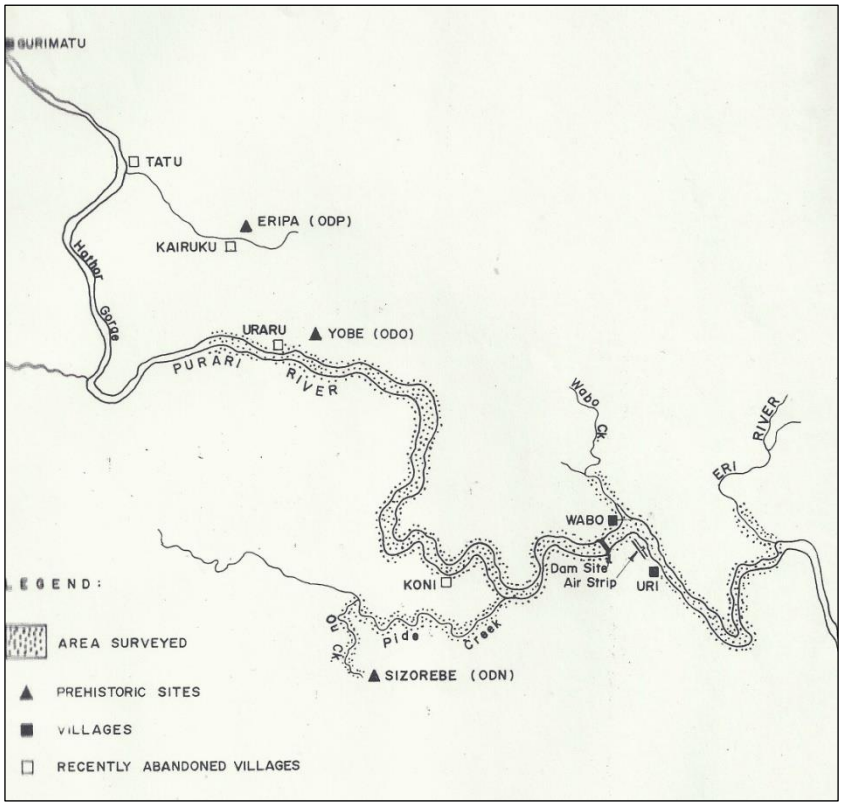
In 1977, Egloff and Kaiku conducted archaeological surveys lasting almost seven weeks in the upper-Purari River area. They were based at Wabo where informants told them about archaeological materials in remote rock shelter sites three-to-four-days' walk north of Wabo. Facing significant logistical constraints during their surveys, Egloff and Kaiku were able to record only three archaeological sites (Figure 4.1). The sites they recorded are:

1. Sizorebe rock shelter (NMAG site code ODN) approximately 18 km southwest of Wabo. The site is 100 m long and 12-14 m high and is located in unstable limestone hills (Sizorebe is outside PRL15 and the PAOI).
2. Yobe rock shelter approximately 29 km northwest of Wabo (NMAG site code ODO). The site is a small rock overhang measuring 3 m wide and 2.5 m deep. The shelter contains stratified archaeological deposits to 25 cm depth (Yobe is outside PRL15 and the PAOI).
3. Eripa caves (NMAG site code ODP) approximately 40 km northwest of Wabo. The site is a complex of caves with three openings each 15-20 m wide and 3-15 m high. A 50 x 50 cm excavation uncovered stratified archaeological deposits containing human bones and pieces of chert to approximately 23 cm depth (Eripa is outside PRL-15 and the PAOI).

Each of the three sites (ODN, ODO and ODP) is ethnographically known and each may contain significant archaeological deposits although the extent of stratified deposits remains unclear (Egloff and Kaiku 1983: 484). Egloff and Kaiku also mention two sites that they were not able to record; one is in Hathor Gorge northwest of Wabo and the other is a rock shelter called Neameimijoe two days by boat and foot north of Wabo village (Egloff and Kaiku 1978: 8). After

completing their archaeological surveys Egloff and Kaiku (1983: 485) concluded that, “the Purari has hidden its prehistory and only through chance or a very time-consuming survey will it be revealed”.

Figure 4.1 Prehistoric Sites in the Purari River (Wabo) Area



Source: Egloff and Kaiku (1978)

Investigating areas at lower elevations in and around the PAOI, Egloff and Kaiku (1983) found after long and detailed consultations that there was no local knowledge of archaeological sites in the area other than those in the limestone hills (as described above). Egloff and Kaiku (1983) suggest that the absence of known archaeological sites is due primarily to the upper-Purari River area being relatively uninhabited during the past. In addition, they point to the poor survivability of archaeological materials in the densely vegetated high rainfall catchment as contributing to the absence of known archaeological sites. The absence of known archaeological sites inside PRL-15 raises the potential that any archaeological sites that may be uncovered during the life of the Project will be of heightened importance because of their rarity. Egloff and Kaiku (1983: 490) surmise that:

> If archaeological sites were found … and firm associations could be drawn between the pattern of life being expressed by the prehistoric remains and the traditional Pawaia pattern of exploitation, the results would be invaluable.

4.2.3 Archaeological Research in Orokolo Bay

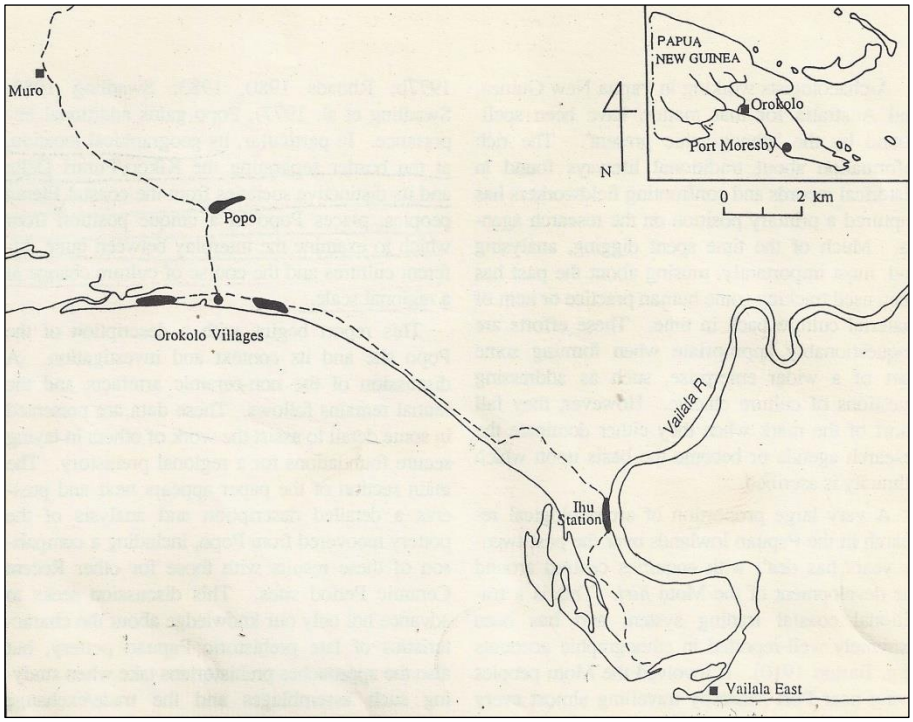
Archaeological research in southern sections of the PAOI has been limited to two small excavations at the Popo site in Orokolo Bay.

The anthropologist F.E. Williams (1940: 28), refers to an ancestral village called Popo in Orokolo Bay and although he apparently did not visit the site, he describes Popo as being located some “two to three miles” (3.2-4.8 km) inland from coastal “Arihava” village (Arihava was the name given to a former settlement near present-day Harevavo village). Williams (1940) suggests that all people living in coastal villages in Orokolo Bay likely trace ancestral origins to Popo. To the east,

Popo is named as an ancestral village by coastal villagers as far as Akapiru village, 35 km east of Orokolo Bay. Describing Popo with reference to changing coastal environments, Williams (1940: 28) wrote, “Popo may well have been a sea village, for the coast of Orokolo Bay has evidently been making ground in recent times, and the population, who are so attached to beach life, have moved forward with it. Indeed the sites of the present villages were mostly, within living memory, under the sea”.

Archaeologist Jim Rhoads visited Popo in 1974. He found that a road connecting the Muro Mission to the coast cut through part of the Popo site, and recovered pieces of pottery and stone tools from a drain at the side of the road. With these finds suggesting that Popo was a rich archaeological site, Rhoads returned there in 1976 to archaeologically investigate the area. Rhoads (1994) describes Popo as located 2.5 km north of Iuku village (Figure 4.2). Rhoads does not give map coordinates for the site, but he does provide a sketch map that shows Popo measuring approximately 1,000 m east-west and 300-500 m north-south. The sketch map shows the site extending eastward from the Muro Mission road (Rhoads 1994: 54). Rhoads excavated at three locations approximately 500 m apart across Popo; excavations were in western, central and eastern sections of the site. The single radiocarbon date obtained from the excavations returned a date suggesting that the site was used around 400 years ago, or possibly earlier. As the date comes from the uppermost layer (Horizon I) of the site, Rhoads (1994: 55) suggested that “a more ancient date for Popo’s initial habitation seems probable”. Rhoads found that Popo contained a rich ceramic assemblage and a Port Moresby provenance for the ceramics is supported by Proton-Induced X-ray Emission (PIXE) analyses, showing that the clay used to make Popo ceramics is likely to have come from sources near Port Moresby. Thus, concluding that the Popo ceramics originated from manufacturing centers near Port Moresby, Rhoads (1994: 66) proposed that the Popo assemblage represents early evidence of Motu *hiri* trade into the Gulf of Papua around 400 years ago.

Figure 4.2 Popo Site Location Map



Source: Rhoads (1994)

In 2015, Dr Robert Skelly (as part of a Monash University project) returned to Popo to direct an archaeological excavation with the aim of clarifying the antiquity of the site (Plate 4.1). Excavations resulted in dates of 131±20 Before Present (BP)[2] for the upper part of the site, and 305±21 BP for a lower and earlier occupation level (unpublished data). A GPS reading was taken at the northwest corner of the 2015 excavation, which in the opinion of informants, was positioned within the boundary of the Popo site as it is known in oral traditions.

Plate 4.1 Excavations at Popo

Source: Skelly (2015)

4.3 Predictive Modelling

4.3.1 Geographic Processes

The proposed upstream facilities are located in the Kikori District of Gulf Province. The district spans two Local Level Government (LLG) areas, Baimuru Rural and Ihu Rural. Within the district are sections of the Purari River basin, Purari River delta and Orokolo Bay in the Gulf of Papua. The Gulf of Papua is characterized by low-lying river deltas formed by sediment bed-loads carried coastward by the Vailala, Purari, Kikori and Fly rivers and smaller rivers and tributaries. The landscape is generally wet-tropical, and there is little seasonal variability. Rainfall records for Ihu (located to the south east of the PAOI) show mean annual rainfall of 3,225 mm/year (range = 2,267-3,250 mm/year). Further inland, rainfall increases with increasing distance from the coast. The Purari River basin and delta are formed on marine clastic sedimentary rocks, which are exposed in limestone ridges in the hills that encompass the Purari basin to the north and west. Low-lying areas of the Purari basin are shrouded by dense jungle and contain fluvial environments with large areas of freshwater swamplands (Löffler 1977). Further to the south, the study area includes the alluvial lowlands of Orokolo Bay.

The Orokolo Bay lowlands contain mainly swampy soils, fine silts and clays overlying mudstone and greywacke (Ruxton 1969a). The aggregating littoral and alluvial plains in Orokolo Bay are devoid of stone suitable for making stone tools. The closest known source of fine-grained stone suitable for making stone tools (chert) can be found in bedded limestone in hills around the Purari basin (Löffler 1977: 21). Archaeologically, the most prospective parts of the study area are in Orokolo Bay and the fringing coastal hills to the north. The Orokolo Bay lowlands comprise alluvial plains with areas of beach ridges, non-tidal freshwater swamps, basins and flood-plains

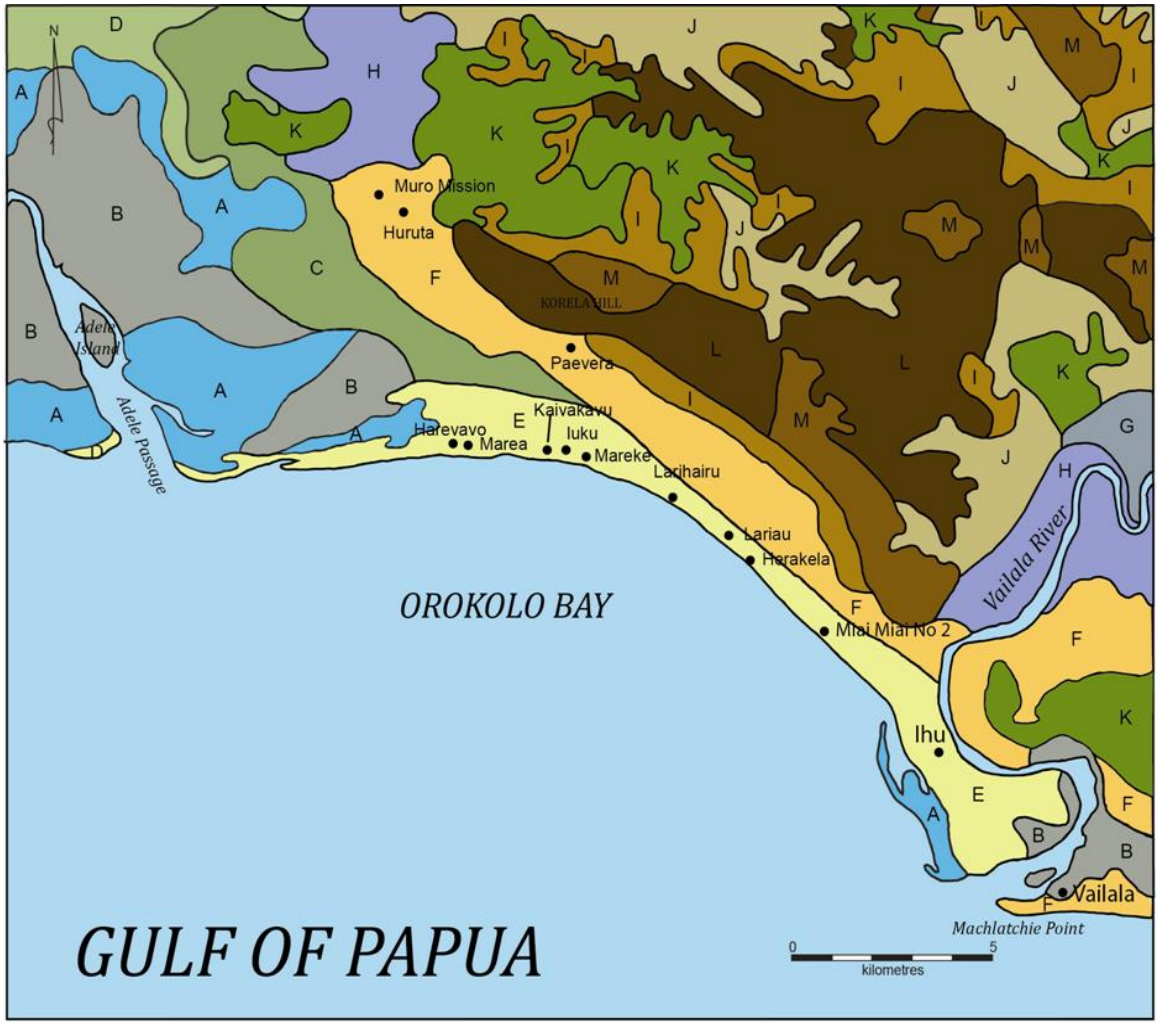
[2] For radiocarbon dating purposes before present (BP) refers to years before 1950 common era (CE). Radiocarbon dating conventions deem 1950 CE to be the 'present' for relative radiocarbon dating purposes.

that merge with brackish tidal flats along river edges (Figure 4.3). Clearly recognizable beach ridges belonging to the Araimiri land system are limited to a narrow beach-fronting strip along the Orokolo Bay coastline. In eastern and central sections of Orokolo Bay, Araimiri beach ridges are backed by beach plains and degraded beach ridges belonging to the Malalaua land system. The Malalaua land system runs parallel to the coast and continues inland as far as the Muro Mission area (Figure 4.3). The Malalaua land system is formed of a chronological succession of former beach dunes left inland as the coastline has extended (prograded) to the south. These old beach dunes would have provided settlement locations preferred by people accessing coastal resources and coastal trading opportunities during the past 1,000 to 3,000 years. The further the beach dunes are from today's coast, the older they are. The oldest dunes are located along the base of hills near the inland margin of Orokolo Bay and inland as far as the Muro Mission area.

Processes of coastal progradation are a key to understanding cultural heritage values in Orokolo Bay. Settlement relocations as a consequence of the coastline extending to the south are a prominent theme in oral traditions documented during cultural heritage surveys (see Appendix 5). Throughout the late-Holocene, the Purari River has been depositing a high bed-load of sand off-shore in Orokolo Bay forming sand bars running parallel with the coast. When the Purari bed-load has reached the coast, finer sediments have tended to be deposited westward by longshore drifting (Löffler 1977: 114), whereas beach-drifting has carried coarser material such as sand in the opposite direction (Thornbury 1954: 430). As a consequence, the sand bed-load of the Purari River has been carried mainly eastward into Orokolo Bay and much of the load has been contained west of Maclatchie Point. Over time, off-shore sand bars have formed beach ridge barriers separating the coast from more turbulent open waters thereby acting as "a kind of pacesetter for the progradation" (Löffler 1977: 115). The inland margins of beach ridge barriers have been infilled with fine silts and clays to form littoral plains. Continuing sediment accumulation has, through time, led to littoral plains becoming land-locked, where they have transformed into freshwater swamps (Chappell and Thom 1977: 284; Ruxton 1969b: 69). As the coastline has advanced seaward, freshwater swamps have followed at the rear (Ruxton 1969b: 69). Similar depositional processes to those that formed today's beaches provide an explanation for the accumulation of the old beach lines inland of today's coastline in Orokolo Bay (Figure 4.3).

Although coastal progradation in the Purari River delta has yet to be researched in detail, there is ample evidence that deltaic landscapes in Gulf of Papua are moving rapidly to the south (Austen 1934: 20; David et al. 2009; Löffler 1977: 113; Rhoads 1994: 53; Ruxton 1969a: 10; Williams 1940: 28). Lowland areas immediately east of the Vailala River are environmentally analogous to those of Orokolo Bay and offer an informative case study on rates of coastal progradation in the Gulf of Papua. Research east of the Vailala River has shown that the coastline there has prograded at rates of between 1.8±0.4 and 2.0±0.4 m/year during the period from 700 to 2700 years ago, and after 700 years ago, progradation rates quickened to between 3.3±0.8 and 4.5±0.9 m/year (Skelly 2014). Although rising sea levels may have worked counter to progradation during the late-Holocene (Carey 1938: 5), rising sea-levels have been more than offset by "sediment supply from the Purari River" with the result that the Orokolo Bay coastline has been "extending rapidly seawards" (Ruxton 1969a: 10). Based on progradation rates known for the Kouri lowlands, it can be speculated that parts of the inland dunes fringing Orokolo Bay may have been beach-fronting settlement locations 800-1,000 years ago and that the old beach dunes in the Muro Mission area may have been beach-fronting settlement locations 2,000 to 2,700 years ago.

Figure 4.3 Land Systems in Orokolo Bay



A = Adel (tidal flats with sofly gleyed fine-textured undifferentiated alluvial swamp soils
B = Nipa (tidal flats with alluvial swamp soils and Nipa palm)
C = Murva (freshwater tidal flats with organic soils and freshwater swamp woodland)
D = Purari (freshwater tidal flats with organic soils and strongly gleyed fine-textured undifferentiated alluvial swamp soil and mid-height, small crowned swamp forest)
E = Araimiri (beach ridges and swales with gleyed sandy soils)
F = Malalaua (beach plains and degraded beach ridges, mainly sandy soils and minor alluvial soils)
G = Tauri (unstable alluvial plains with alluvial soils and tall large-crowned open canopy forest)
H = Hepea (stable alluvial plains with alluvial soils and tall large-crowned forest with a moderate to well-closed canopy)
I = Hauta (Concavo-convex moderate slopes with strongly weathered acid soils and small- to medium-crowned hill forest)
J = Vailala (alluviated basin plains with alluvial soils and mid-height, small to medium-crowned basin forest)
K = Movori (freshwater swamps, fine alluvial swamp soils and swamp woodland)
L = Aro (low branching parallel ridges with very steep slopes and uniform textured strongly acidic soils and mid- to medium-height crowned hill forest
M = Maipora (low branching ridges with very steep slopes and uniform textured soils and mid-height small to medium-crowned hill forest)
Source: CSIRO, drafted after Ruxton et al. 1969

4.3.2 Archaeological Studies in Neighboring Regions

East of the Vailala River, a series of archaeological investigations in an area known as the Kouri lowlands inform archaeological expectations for Orokolo Bay (David et al. 2008, 2009; Moffat et al. 2011; Skelly 2014; Skelly et al. 2010, 2014, 2016). The Kouri lowlands are occupied by Keuru-speakers who live in coastal and hinterland villages. Orokolo and Keuru are separate languages although they are mutually intelligible. Linguistic affinities between Keuru and Orokolo languages

suggest shared historical experiences and, given that physical environments east and west of the Vailala River are similar, historical events in the two areas may share similar themes.

Archaeological excavations east of the Vailala River have shown that ancestral villages there maintained a succession of changing relationships with Austronesian-speaking maritime exchange partners coming from the east over the past 2,600 years (Skelly 2014). Archaeological excavations revealed pottery with decorations stylistically akin to those found on Lapita pottery and obsidian originating from west Fergusson Island in the Massim region. These artefacts demonstrate that from 2,000 to 2,600 years ago, mid-regions of the Gulf of Papua participated in networks of social interaction over a distance of 900 km to the southeast by sea (Skelly et al. 2016). Lapita peoples were the bearers of the earliest known ceramic tradition in the Oceanic region. Lapita ceramics first appeared in the Bismarck Archipelago, east of mainland Papua New Guinea, within the period 3,470-3,250 cal BP (Denham et al. 2012: 39). Excavations in 2009-2010 at Caution Bay, 20 km northwest of Port Moresby, revealed a previously unknown western arm for the spread of Lapita along the south coast of Papua New Guinea (David et al. 2011, 2012; McNiven et al. 2011, 2012a, 2012b). These new Lapita discoveries breach what were then the known spatial boundaries of Lapita influence. Bedford and Sand (2007: 3) summarize characteristics of Lapita colonization's as:

> …the Lapita phenomenon was likely to have involved a myriad of complex contact and interaction situations over centuries, with varying and changing outcomes depending on the place and the time, as is the case with all migratory events that arrive on the shores of already occupied beaches.

At the time Lapita peoples were expanding westward along the south coast of Papua New Guinea, the Kouri lowlands and Orokolo Bay formed sheltered bays fringed by sandy beaches well suited for settlement by people using coastal resources and engaging in maritime trade. It is likely that the Lapita settlements on the Kouri coastline were not isolated outposts and that Lapita people also established a presence on the ancient beaches of Orokolo Bay. An important point here is that because of coastal progradation, Lapita and post-Lapita sites will be found on the deflated dunes and beach plains 2-7 km inland from the present-day coastline in Orokolo Bay. If over time people maintained a preference for living in beach-fronting locations as they do today, we can expect that villages relocated southward following the prograding coastline. Thus, in the case of Orokolo Bay, there is likely to be a chronological succession of occupational sites that become progressively older the farther one moves inland from the coast with the oldest archaeological sites likely to be found on deflated dunes along the southern margins of the inland hills and beach plains near Muro.

Artefacts made of obsidian from Fergusson Island found at Kouri lowland archaeological sites and dating to 2,000-2,600 years ago are particularly informative about past cultural interactions on the south coast of Papua New Guinea. Despite excavations at sites of similar age, no obsidian has been found in deltaic regions of the western parts of the Gulf of Papua. Skelly et al. (2016) suggest that Lapita peoples and their descendants limited their settlements and social networks to the wide sandy beaches and offshore islands on the south coast of Papua New Guinea. They predict that the western limits of wide sandy beaches during the late-Holocene (i.e. the western edge of Orokolo Bay) will mark the spatial boundary of socio-cultural relationships involving the use of Fergusson Island obsidian and Lapita pottery. If their modelling is correct, the old beach lines on the northern edge of Orokolo Bay and the beach plains at Muro may contain Lapita and post-Lapita archaeological sites of National and International significance.

For some 1,000 years after the Lapita period ended, people continued to live in coastal villages in the Gulf of Papua and maintain chains of communication stretching as far as Amazon Bay 600 km to the east. Some 1,200 to 1,500 years ago, waves likely broke on beaches near coastal hills fringing Orokolo Bay to the north. Research east of the Vailala River shows a dramatic change in social interactions taking place around this time. The change is signaled by a ten-fold increase in the density of pottery sherds in archaeological sites (Skelly 2014). In addition, the pottery that was used 1,200 to 1,500 years ago has nothing in common with previous pottery traditions in terms of decoration, vessel form or the type of clay that was used to make the pots. The ten-fold increase

in pottery sherd deposition suggests that populations were flourishing during a period of increased communication and interactions between beach-fronting villages on the south coast of Papua New Guinea. During this period of heightened social activity, it is probable that social interactions also included beach-fronting villages in Orokolo Bay.

At some point during the period of heightened social interaction, people relocated villages to strategically defendable coastal hills along at least 600 km of the south coast of Papua New Guinea. Then some 1,200 years ago, formerly busy hill-top villages were abandoned and there is no evidence of any cultural activity in coastal locations in the Gulf of Papua for the following 500 years. The 500 year-long cultural hiatus corresponds with what is known as the 'Ceramic Hiccup', a period of social disruption that affected villages from the Kikori River delta in the west, and eastward as far as Caution Bay near Port Moresby. We can expect that the dramatic events unfolding at the time would also have affected villages that may have been in hill top locations overlooking Orokolo Bay.

People returned to the south coast of Papua New Guinea after some 700 years ago and they again showed a preference for beach-fronting settlement locations. At that time they used pottery that is not comparable to ceramic traditions prior to the 500 year-long cultural hiatus. The introduction of new ceramic traditions heralded the commencement of a new period of regional cultural interaction (Allen 1977a: 38, 1977b: 399; Irwin 1985: 245; Vanderwal 1973: 196).

Cultural activity in coastal villages appears to increase some 300 to 500 years ago likely signaling the emergence of social relationships antecedent to the ethnographic *hiri*. The *hiri* involved annual trading voyages by Motu and Koita seafarers from villages near present-day Port Moresby. These voyages involved large fleets of lagatoi (trading vessels) sailing to the Gulf of Papua to exchange pots for sago. Based on figures collated by Barton (1910: 114-115), an expedition in 1885 carried some 25,950 pots that were exchanged for more than 450 tons of sago (for other estimates, see Bevan 1890: 138; Chalmers 1887: 70). This was the period when *hiri* trading languages (HTLs) emerged in the Gulf of Papua. Dutton (1982: 85) found that there were two HTLs and that the HTL(E) spoken east of the Vailala River was more complex than the HTL(K) spoken in the Purari region. Based on its greater structural complexity, Dutton (1982) speculates that the HTL(E) spoken east of the Vailala River may be older than its western counterpart which is supported by archaeological evidence suggesting that communication between ancestral Motu and Keuru-speaking groups commencing after some 700 years ago may have remained limited to areas east of the Vailala River before *hiri* relationships expanded further to the west.

In summary, archaeological research on the south coast of Papua New Guinea, in conjunction with geographic processes suggest that:

1. Archaeological sites of potentially National and International significance and dating to approximately 2000-2700 years ago may be present in the Muro Mission area up to 7km inland from the coast.
2. Archaeological sites dating to the period 1000-1200 years ago may be present in the coastal hills that overlook Orokolo Bay to the north.
3. Archaeological sites belonging to a period 800-1,000 years ago may be present on deflated dunes located along the southern base of the coastal hills that overlook Orokolo Bay.
4. Archaeological sites are unlikely to be found anywhere in Orokolo Bay that date to within the period 700 and 1200 years ago.
5. Archaeological sites dating to the past 500 years are likely to be abundant in Orokolo Bay, particularly on deflated dunes approximately 1-2 km inland from today's coastline.

5. Approach and Study Methods

5.1 General Approach

During a dedicated field survey awareness campaign, Community Liaison Officers (CLOs) working on behalf of TEP PNG visited villages to discuss the timing of proposed cultural heritage surveys. As a result, communities were very welcoming and well prepared to discuss cultural heritage matters when the cultural heritage team arrived (Plate 5.1). In most instances, key informants with detailed knowledge of their community's tangible and intangible cultural heritage values had been appointed by community leaders in advance of the cultural heritage team arriving at villages. CLOs also formally introduced members of the cultural heritage team upon their arrival at villages and fielded questions from the community prior to consultations commencing. In addition, CLOs remained available throughout consultations to answer Project related questions that were outside the scope of the cultural heritage consultations.

Plate 5.1 Man Displaying Cultural Materials during Community Consultations (Kaevaria Village)

The methods used for this study were a combination of interviews, group discussions and physical site inspections (taking into account proximity of site from village). Key informants provided a balanced representation of clans within the villages, which is significant in that today the clan represents the most important social unit at a village level. Consultations also allowed time for discussions amongst the interviewees themselves. The importance of the intra group discussions was to allow for a balanced community response to questions that were asked by the interviewer.

During consultations, key informants were asked about their tangible cultural heritage sites and materials (ancestral village sites, spirit sites, archaeological sites, women's sites and ancestral heirlooms; for details see appendix 5). When specifying that women's sites represented one of

the site types being investigated, it was stated that inputs from women about cultural heritage matters would be welcomed by the team. On the seven occasions that women were involved in consultations, they contributed almost no information about women only sites (probably due to confidentiality), but women participating in consultations were actively engaged in discussions about other community cultural heritage values.

Key informants were also asked if there were any tangible cultural heritage sites that they wanted the team to survey and formally record while visiting their villages. It was explained that sites that were recorded would be registered with NMAG for entry in the National Site Register. Key informants were also asked to consider the importance of their tangible cultural heritage sites and materials and provide a preliminary importance rating (high, medium or low) for formally recorded tangible cultural heritage sites as well as sites that were identified during consultations but were not formally recorded (due to lack of access or issues of confidentiality). The importance ratings reflect local contemporary community views. A tangible heritage site attributed high importance likely contributes to community identity and/or justifies rights in land. A site attributed medium or low importance has diminished socio-cultural or political relevance for issues of community identity or rights in land.

Tangible cultural heritage sites were recorded using standard site record sheets that document environmental settings and site characteristics. Site locations were recorded using handheld Garmin GPS units (WGS84 datum).

Key informants were also asked about their communities' intangible cultural heritage values (language, oral traditions related to ancestral villages, spirit/ritual/sacred places, song, dance, practices related to sago processing, hunting, fishing, traditional dress and traditional medicines); for details see appendix 5. Key informants were asked to consider the importance of their cultural heritage values and to provide a preliminary importance rating (high, medium or low) for each category of intangible cultural heritage values. In instances where key informants attribute high importance to an intangible cultural heritage value, that value likely plays a key role in defining and maintaining community identity and would be passed from generation to generation. An intangible cultural heritage value attributed medium importance would likely have a declining role in maintaining community identity and may not be passed from generation to generation. An intangible cultural heritage value attributed low importance probably no longer contributes to maintaining community identity and is likely fading from community memory.

Cultural heritage values attributed low or medium importance at a local scale may be accorded high importance at regional or national scales. Determining site importance at regional or national scales requires additional inputs from National Regulatory authorities. A method for determining the site significance so that sites can be assigned IFC classifications will be developed in conjunction with NMAG during the impact assessment phase and will be included in the Project Impact Assessment Report.

In this baseline characterization report, cultural heritage values are attributed to two internationally recognized classifications; tangible and intangible. These classifications are not mutually exclusive; tangible cultural heritage values are often imbued with intangible cultural heritage attributes that give tangible values cultural meaning (e.g. ancestral knowledge or cultural practices). The interconnectedness between tangible and intangible cultural heritage values is illustrated in the relationships between oral tradition sites and archaeological sites. Oral tradition sites may have archaeological manifestations, and archaeological sites may be imbued with values maintained in oral traditions, but these relationships are not always present. Definitions used to characterize cultural heritage site types are presented below.

5.2 Field Surveys

The cultural heritage team comprising John Sepe (SRI) and Robert Skelly (ERIAS Group) conducted cultural heritage spatial mapping in the Gulf Province study area from 7th May to 1st June, 2016 and 20th August to 24th August, 2016. They held meetings with clan leaders and senior community members (key informants) representing 32 villages. In addition, David

Kombako (University of Papua New Guinea) held meetings at a further two villages (Avavu and Hepere). Cultural heritage consultations involved 34 villages in total (Table 5.1). These villages were represented by 157 key informants who directly participated in discussions about cultural heritage matters relating to their communities.

Table 5.1 Location of Cultural Heritage Consultations

Project Area	Language Group	Villages
PRL-15	Pawaian	Ura, Wabo, Subu 2, Poroi 2
Riverways and inland section of export pipeline corridor	Koriki	Ara'ava, Kairmai, Kairu'u-Akoma, Ikinu-Kakari
	Iare	Mapaio, Kaevaria, Aivai, Aumu, Maipenairu
	Ahia	Evara
	Kaimare	Upaia, Mariki
	Maipua	Apiope
Coastal section of export pipeline corridor (Orokolo Bay)	Orokolo	Huruta, Paevera, Ere-Kilavi, Avavu, Hepere, Marea, Harevavo, Kaivakavu, Iuku, Larihairu, Mareke, Kavava, Oru-Herakela-Lariau.

5.3 Definitions

5.3.1 Tangible Cultural Heritage

Tangible cultural heritage values have a physical presence that can be seen or touched and include archaeological sites where physical remains of past cultural activity are present (e.g. pieces of pottery or shell on the ground surface), landscape features such as hills, caves and river mouths, individual trees or stands of vegetation or other landscape or biogeographic manifestations of spiritual, sacred or ritual significance. In addition, tangible cultural heritage values include movable material cultural items (e.g. ancestral heirlooms, traditionally made items used in day-to-day subsistence or leisure activities).

IFC Performance Standard 8 (2012) defines tangible cultural heritage as:

> (i) tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values; (ii) unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls.

5.3.2 Intangible Cultural Heritage

UNESCO (2003) provides a well-encompassed definition of intangible cultural heritage values:

> The "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

The 'intangible cultural heritage', as defined above, is manifested inter alia in the following domains:

1. Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage.
2. Performing arts.

3. Social practices, rituals and festive events.
4. Knowledge and practices concerning nature and the universe.
5. Traditional craftsmanship.

5.3.3 Archaeological Sites

Archaeological sites are places with visible archaeological traces of past cultural activity. Archaeological sites may contain stratified deposits of materials such as pottery sherds, pieces of stone, shell or bone. An archaeological site may also be manifested as earth works, post holes, stone arrangements or anthropomorphically altered physical or biogeographic landscapes. An archaeological site is recorded as a discrete site where visible cultural materials are more than 15 m from its nearest neighboring cultural materials and where there is an absence of physical evidence or oral testimony to suggest that the materials are part of the same site.

5.3.4 Oral Tradition Sites

Oral tradition sites are places where oral testimony gives those locations cultural significance by virtue of memorialized ancestral connections to particular locations without necessary recourse to archaeological evidence. Oral tradition sites may also have tangible physical manifestations such as anthropomorphic, geographic or biogeographic features.

5.3.5 Ancestral Heirlooms

Ancestral heirlooms are replicable heritage items as defined under IFC performance standard 8, Cultural Heritage. These items are vulnerable to being lost as a consequence of changing economic circumstances and need to be afforded specific protections.

5.4 Permits Obtained

Cultural Heritage surveys were conducted under the conditions described in Cultural Heritage Mapping Permit (Number 001) issued by NMAG (Appendix 1). The permit conditions allow for cultural heritage researchers to:

> conduct (a) oral documentation of spatial arrangements of cultural properties, and (b) cultural heritage landscape mapping.

Permit conditions do not allow cultural heritage researchers to “conduct archaeological surveys” and adhering strictly to permit conditions, no archaeological surveys were carried out during the field work conducted to enable the preparation of this report.

5.5 Limitations

All known tangible cultural heritage sites in close proximity to villages were formally recorded. Attempting to inspect sites that were further afield was impractical given time constraints and difficult terrain. Estimating the time needed to inspect more distant sites was difficult. For example, informants initially described that the Ape Ohoro spirit site was a short walk from Herakela village, but on further discussion it was concluded that inspecting the site and returning to the village would take a whole day. Although study members were keen to inspect as many tangible sites as practical, they chose not to reduce the time spent on consultations when the distances involved were uncertain.

The study area is vast and some areas are difficult to access. On occasions informants knew the precise locations of ancestral village sites; however, just two ancestral village sites were near enough to villages to be recorded (Haralua and Vaii Vavere). All other ancestral villages were outside the scope of aerial photographs shown to informants during consultations. The photographs covered areas of approximately 16 km^2 around present-day villages. Most ancestral village sites that were named but not recorded were described as being at distant locations or in general localities (i.e. the precise locations of all ancestral villages are not known). The Popo ancestral village site in Orokolo Bay was near enough to coastal villages for inspection. However,

the area remains contentious with Muro (inland Popo) and Orokolo (coastal Popo) villagers claiming ancestral connections to the area. After talking with community leaders it was decided that additional consultations involving Muro and Orokolo communities will be needed before the Popo area can be inspected. Site inspections at Popo are also constrained by the site being located adjacent to tidal swamplands frequented by saltwater crocodiles.

Informants used their preferred languages during community consultations. The languages that they chose to use variously included the seven Papuan languages spoken in the study area (Pawaia, Koriki, I'ai, Ahia, Kaimare, Maipua and Orokolo), Hiri Motu, Tok Pisin and English. Consultations regularly involved individual informants using different languages during a single discussion. For example, during consultations at Paevera village, older informants used Hiri Motu, younger informants used Tok Pisin and one senior community leader chose to use English. There were many instances where more than one language was used in a single discussion resulting in consultations often progressing very slowly. Even where informants used one language, opinions about the specific details contained in oral traditions often varied between informants and details had to be discussed and cross-checked multiple times to ensure that they were accurately recorded. Although time consuming, cross-checking opinions and translations was essential to ensuring that consensus was achieved amongst informants that their community cultural heritage values are accurately represented in transcriptions.

On all but one occasion, consultations were held in community forums with informants drawn from more than one residential clan. Having a number of clans involved in consultations limited discussions about ancestral migrations and spiritual values because details are often confidential to individual clans. Given that consultations involved informants from 109 clans (representing 245 clans in the study area) documenting cultural heritage values at an individual clan level would take an inordinate amount of time.

There are almost certainly cultural heritage sites in the PAOI known to communities that were not reported during consultations. Informants may have chosen not to divulge information about sites known to them because of for example; conflicting claims to land, tensions arising out of reconciling traditional and Christian perspectives, or for confidentiality reasons related to clan affiliations or gender. An important point to remember is that local views on cultural heritage matters do change and may change during the life of the Project. It remains possible that the location of cultural heritage sites may only be disclosed when direct Project impacts on a site are imminent. Such sites may be identified by communities so that they can be avoided or protected although divulging new information may also serve local political purposes.

Men and women were invited to participate in all cultural heritage consultations. Thirteen women (9% of key informants) represented seven villages during consultations (Ara'ava, Kairimai, Mapaio, Poroi 2, Upia, Ikinu and Apiope). On those occasions when women were represented, no women's sites were discussed and having more women involved during consultations may not have necessarily led to more women's cultural heritage values being identified. The fact that only two women's sites were named during consultations suggests that female informants probably chose not to name or discuss women's cultural heritage values with men present. A detailed characterization of women's cultural heritage values would require a female cultural heritage team convening meetings for women only so that they could openly express views about their cultural heritage values.

In some villages there were tensions amongst informants when questions were asked about traditional spiritual values. Informants maintaining Christian values were often forthright in censuring discussions about traditional spiritual values. On occasions it was apparent that some informants would have preferred to discuss traditional spiritual matters but they provided little information so as to avoid disharmony. An aversion to discussing traditional spiritual values was most apparent on the Orokolo coast where missionaries had been most active and at Poroi 2 village where Tom Kabu introduced the Baha'i Faith. Thus, there may be traditional spirit sites inside the study area that were not documented during consultations.

Despite the above limitations, which are all typical of cultural heritage assessments in Papua New Guinea, information obtained during consultations has been adequate to describe both the ethnographic and cultural heritage landscape and identify important cultural heritage values in the study area.

6. Baseline Characterization

This section of the report presents results from spatial cultural heritage mapping and community consultations in the PAOI. It begins with an overview of the cultural heritage values of the study area which represents the synthesis of the recorded sites and consultations held across the study area, thus guiding interpretations toward a characterization of regional cultural heritage themes in the study area.

Twelve tangible cultural heritage sites were formally recorded during the baseline study. In addition, one cultural heritage site, the PRL-15 oxbow wetlands, was documented but not formally recorded due to logistical constraints. An accurate location of the site however has been determined using aerial imagery. Detailed descriptions of these sites are provided in Appendix 4. Their locations are shown in Figures 6.1 and 6.2 along with other known tangible cultural heritage sites that have been previously recorded in the PAOI. Sites that were mentioned during consultations but that were not formally recorded are not included on the figures (refer to Appendix 4 for further information).

In addition to those sites that were formally recorded, 77 ancestral village sites, 18 spirit sites, and two women's sites were named during community consultations but were not formally recorded. Some of the named sites are at distant locations outside the PAOI and others are at locations known to key informants that may be inside the PAOI. In addition, the locations of some of the named sites are beyond social memory and have now been forgotten.

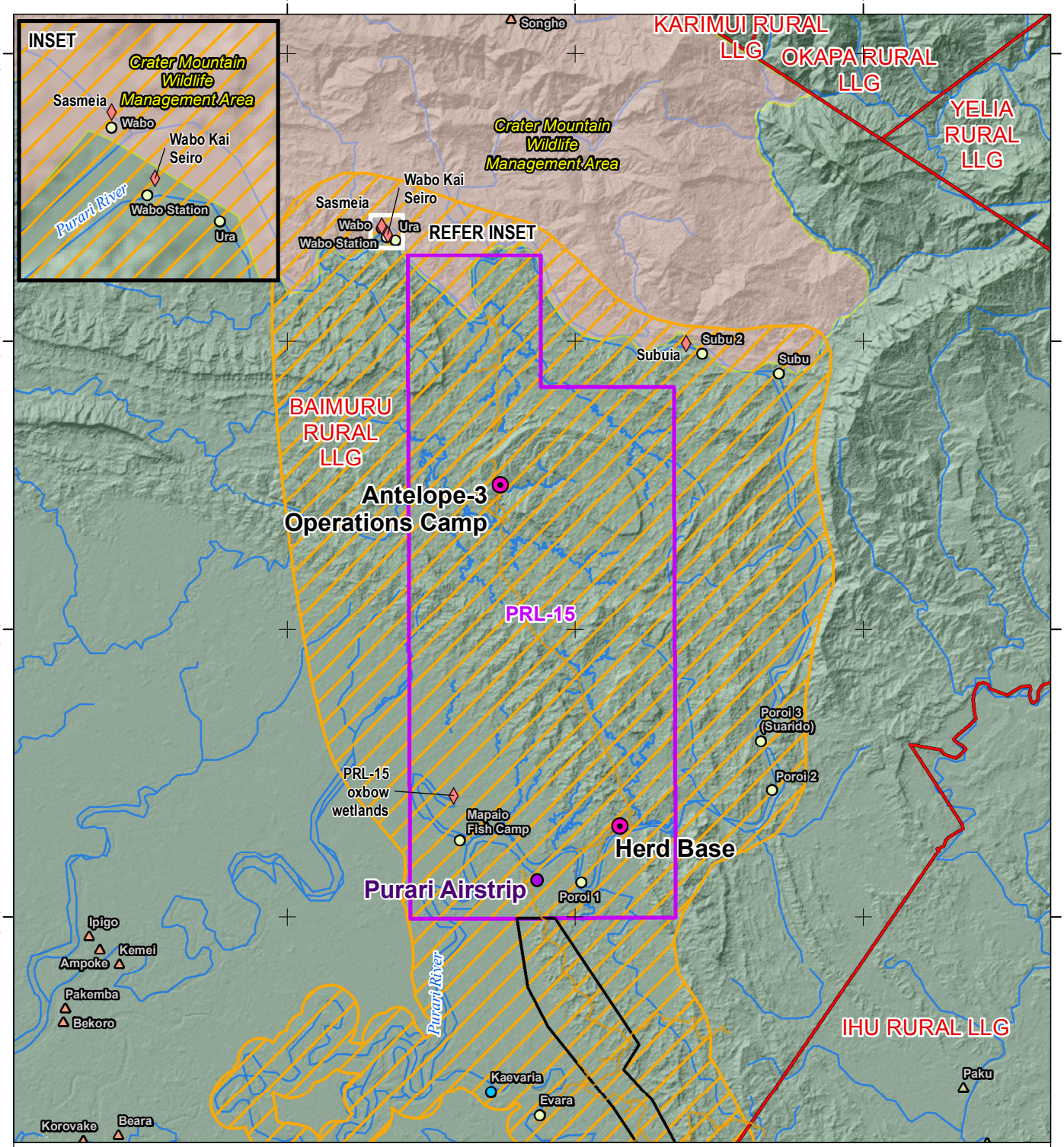
Reports from the cultural heritage consultations held at 34 villages in the study area are reported in Appendix 5. Each village maintains its own identity and results are therefore reported for each village individually.

6.1 Cultural Heritage Values in the PAOI

Spatial cultural heritage mapping and community consultations contribute to a baseline characterization of the cultural heritage values maintained by 34 village communities. For each community, tangible and intangible cultural heritage values are fundamental to substantiating and maintaining their unique cultural identities. In addition to village level documentation, shared historical themes and social interactions between village communities inform baseline cultural heritage themes at nested linguistic, social and geographic scales. A synthesis of the data obtained from spatial cultural heritage mapping and community consultations provides a culturally nuanced characterization of cultural heritage values in the PAOI. Themes that emerge in records of tangible cultural heritage values are discussed under five categories (see Table 6.1):

1. Ancestral village sites.
2. Spirit sites.
3. Women's sites[3].
4. Archaeological sites.
5. Ancestral heirlooms.

[3] During consultations only one men's site at the PRL-15 oxbow wetlands was identified. Exclusive men's houses, referred to as 'eravo' on the coast and 'ravi' in the Purari delta are no longer standing however the places where these men's houses once stood are often important cultural heritage sites (Appendix 3).



SCALE: 1:400,000 @ A4

0 4,000 8,000 12,000 16,000 Metres

COORDINATE SYSTEM: PNG94 PNGMG94 Zone 55

- Existing airstrip
- Base Camp

Cultural Sites - Community-Level SBS

- Spirit/Ritual Site

Towns and Villages

Project Affected Communities

- PRL-15
- Riverways

Host LLG Communities

- Baimuru Rural
- Ihu Rural

- Tracks
- Rivers
- Local level government boundaries
- Export pipeline corridor
- Upstream project area of influence
- PRL-15 License
- Crater Mountain Wildlife Management Area

Note, not all Host LLG Communities have been verified in the field.

N

TITLE: Tangible Cultural Heritage Sites (PRL-15)

FIGURE: 6.1

PROJECT: Papua LNG Project

DOCUMENT NUMBER: R_102-80122 **REVISION:** L

DATE: 16/05/2017

DATA SOURCES:

Facilities, pipeline routes, villages, rivers, tracks, PRL15, hillshade supplied by ERIAS and TOTAL (2015-2016). Cultural sites supplied by ERIAS Group (2016). LLG Boundaries from HDX and then spatially adjusted to align with background and coastal boundaries removed. Upstream project area of influence digitised by Mipela GeoSolutions based on data supplied by ERIAS Group (2017).

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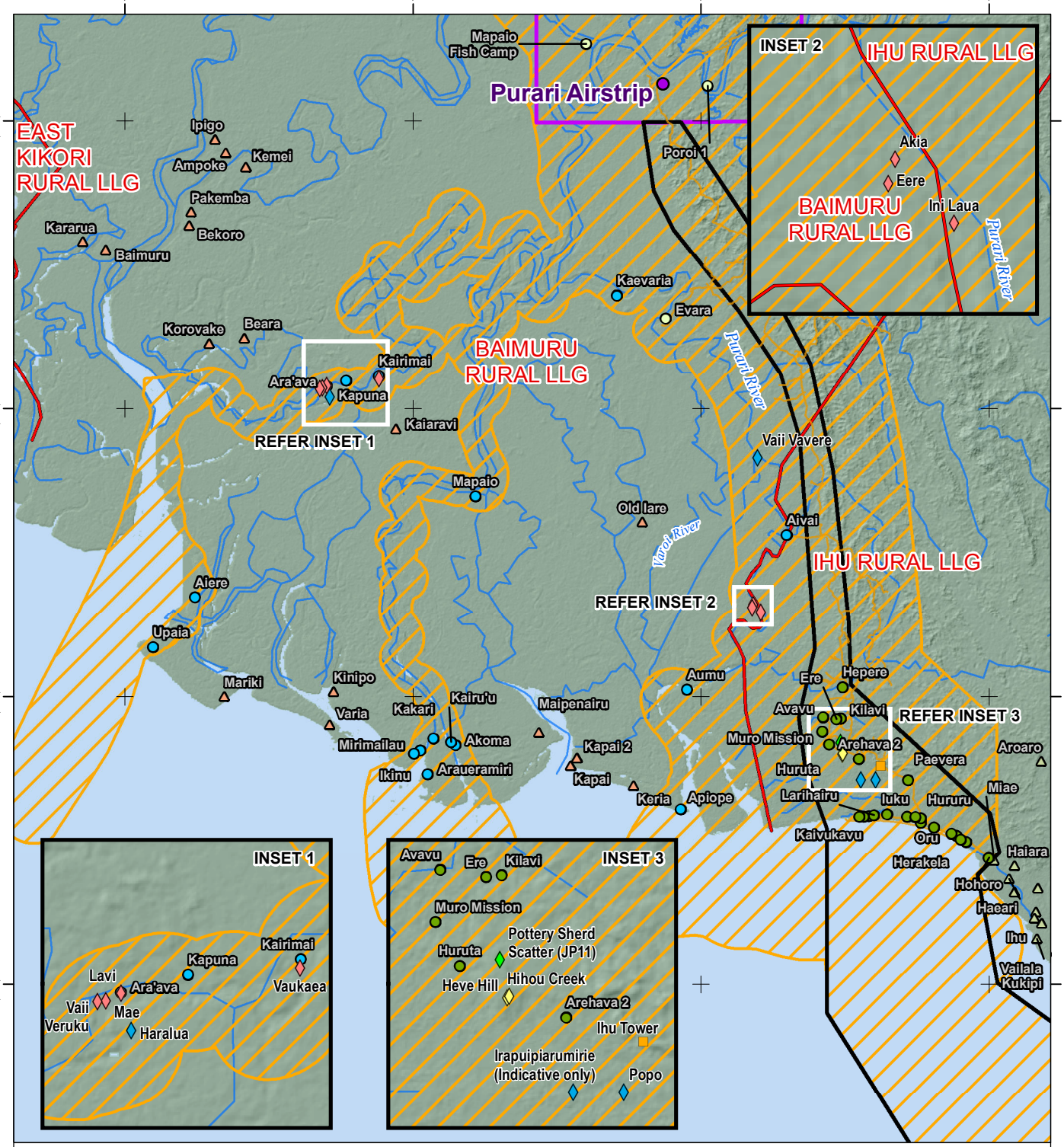

SCALE: 1:400,000 @ A4

0 4,000 8,000 12,000 16,000 Metres

COORDINATE SYSTEM: PNG94 PNGMG94 Zone 55

- Existing airstrip

Cultural Sites - Community-Level SBS
- Ancestral Village
- Archaeological Site
- Cultural Site Complex
- Landmark
- Spirit/Ritual Site

Towns and Villages

Project Affected Communities
- PRL-15
- PER
- Riverways

Host LLG Communities
- Baimuru Rural
- Ihu Rural

- Tracks
- Rivers
- Local level government boundaries
- Export pipeline corridor
- PRL-15 License
- Upstream project area of influence

Note, not all Host LLG Communities have been verified in the field.

N

TITLE: Tangible Cultural Heritage Sites (Export Pipeline Corridor and Riverways)

FIGURE: 6.2

PROJECT: Papua LNG Project

DOCUMENT NUMBER: R_102-80121 **REVISION:** L

DATE: 16/05/2017

DATA SOURCES:
Facilities, CPF area, export pipeline corridor, towns and villages, waterways, tracks, PRL-15, hillshade supplied by ERIAS Group and TOTAL (2015-2016). Cultural sites supplied by ERIAS Group (2016). LLG Boundaries from HDX and then spatially adjusted to align with background and coastal boundaries removed. Upstream project area of influence digitised by Mipela GeoSolutions based on data supplied by ERIAS Group (2017).

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Table 6.1 Tangible Cultural Heritage Sites and Materials

Present-day Village*	Language	Resident Clan#	Key Informant Clans†	Ancestral Village Sites**	Sprit/Ritual/Sacred Sites	Archaeological Sites	Women's Sites	Ancestral Heirlooms
Ura	Pawaia	12	1	known (confidential)	Wabo Kai Seiro##, Peiweino, Twepei, Wepei, Joropeswanopon, Laupara, Seramaseno	known	Moiwailedsa	absent
Wabo		25	5	known (confidential)	Sasmeia##	known	unknown	axe/adze
Subu 2		4	2	known (confidential)	Subuia##	unknown	unknown	present
Poroi		4	4	known (confidential)	Maiebe-Warubeneai, PRL-15 oxbow wetlands#	unknown	unknown	absent
Ara'ava	Koriki	9	3	Haralua##, Iavo Uo Upiane, Uaiari, Kauri Nu Poke	Lavi## Mae##, Vaii Veruku##	known	unknown	shell valuables
Kairimai		12	3	Aneka, Kauri Nu Poke	Vaukaea##	unknown	unknown	absent
Kairu'u		14	5	Unia Uku Pari	Alau Kaipu, Aua Euao	unknown	unknown	absent
Akoma		3	1	U'upu Akoma, Pana Poa, Old Akoma	unknown	unknown	unknown	absent
Ikinu		14	3	Ikinu 1, Ikinu 2, Ikinu 3	unknown	unknown	unknown	present
Kakari			5	Kakari 1, Kakari 2	unknown	unknown	unknown	absent

*. Present-day villages
**. Past (ancestral) villages known to key informants from oral traditions
#. The total number of clans resident in villages at the time of consultations
†. The total number of clans with key informants directly involved in consultations (key informants were appointed by the participating communities)
Tangible cultural heritage sites formally recorded during this study

Table 6.1 Tangible Cultural Heritage Sites and Materials (cont'd)

Present-day Village*	Language	Resident Clan#	Key Informant Clans†	Ancestral Village Sites**	Sprit/Ritual/Sacred Sites	Archaeological Sites	Women's Sites	Ancestral Heirlooms
Mapaio	Iare	12	8	Kairi Uku, Vaupe, Kunou, Ikre Laua, Pairi Laua, Kairi Peair Vaivre, Pairi Mallu	known	unknown	unknown	absent
Kaevaria		1	1	known (confidential)	unknown	unknown	unknown	axe/adze and shell valuables
Aivai		4	1	Subu, Vaii Vavere##, Mailea	Akia Ini Laua##	known	unknown	absent
Aumu		4	4	Old Iare, Mairi Vaara, Kaivere, Lalareanuparii	Mairi Vaara	known	unknown	shell valuables
Maipenairu		4	4	Maipenairu 1	unknown	known	unknown	absent
Evara	Ahia	7	3	known (confidential)	known	unknown	unknown	shell valuables, clay pots, stone tools
Upia	Kaimare	5	5	Namaina, Maura Bana, Mariki, Upaia1	known	unknown	unknown	*hiri* trade pots
Mariki		13	4	Kaimare Daua, Kairi Purari, Mairau Pairi	Are'akere, Kara	unknown	unknown	absent
Apiope	Maipua	16	2	Diai, Subu, Umeni, Baibere, Bikoki, Birua, Ore, Vari, Aukia, Vaveko, Aia, Aivai	Yemelavi	known	Vaea	shell valuables

*. Present-day villages
**. Past (ancestral) villages known to key informants from oral traditions
#. The total number of clans resident in villages at the time of consultations
†. The total number of clans with key informants directly involved in consultations (key informants were appointed by the participating communities)
Tangible cultural heritage sites formally recorded during this study

Table 6.1 Tangible Cultural Heritage Sites and Materials (cont'd)

Present-day Village*	Language	Resident Clan#	Key Informant Clans†	Ancestral Village Sites**	Sprit/Ritual/Sacred Sites	Archaeological Sites	Women's Sites	Ancestral Heirlooms
Huruta	Orokolo	5	2	Paku, Ovuvura, Purari, Muro, Popo, Heve	known	known	unknown	shell valuables, stone tools
Paevera		5	3	Heve, Popo	known	known (JP11, Heve Hill)##	known	shell valuables, stone tools
Ere		7	3	Kaukpa Horo, Heve, Popo	Arara Kaipu, Moro Kaipu	known (JP11, Heve Hill)##	unknown	*hiri* trade pots
Kilavi		7	2	Kaukpa Horo, Heve, Popo	Arara Kaipu, Moro Kaipu	Known (JP11, Heve Hill)##	unknown	*hiri* trade pots
Avavu		5	5	Heve, Popo	known	known	known	present
Hepere		4	2	Heve, Popo	known	known	known	present
Marea		4	2	Uivi, Heve, Popo, Irapuipiarumirie	unknown	unknown	unknown	absent
Harevavo		5	4	Heve, Kerarapo, Popo, Kaura Ipi, Miravi Lavi	Epe Loaki, Hari Hoho Creek	known	unknown	shell valuables

*. Present-day villages
**. Past (ancestral) villages known to key informants from oral traditions
#. The total number of clans resident in villages at the time of consultations
†. The total number of clans with key informants directly involved in consultations (key informants were appointed by the participating communities)
Tangible cultural heritage sites formally recorded during this study

Table 6.1 Tangible Cultural Heritage Sites and Materials (cont'd)

Present-day Village*	Language	Resident Clan#	Key Informant Clans†	Ancestral Village Sites**	Sprit/Ritual/Sacred Sites	Archaeological Sites	Women's Sites	Ancestral Heirlooms
Kaivakavu	Orokolo	6	4	Wabo, Subu, Poroi, Purari Kaohere, Heve, Apaura, Maiaro, Popo	unknown	known	unknown	shell valuables
Iuku		7	5	Iuku, Mere Iuku, Kaineku, Mai Lapa, Opura, Hare Kila, Heve, Popo	unknown	known	unknown	shell valuables
Larihairu		6	4	Kerapai, Wabo, Subu and Poroi, Maiaro, Heve, Popo	unknown	known	unknown	shell valuables
Mareke		8	3	Ma Poi, Miro, Evaro, Hevei, Ikava, Heve, Popo	unknown	known	unknown	shell valuables
Kavava		9	3	Hepea, Oma, Heve, Popo	unknown	known	unknown	absent
Herakela		2	2	Heve, Popo	Ape Ohoro	known	unknown	absent
Lariau		2	2	Heve, Popo	Ape Ohoro	known	unknown	absent

*. Present-day villages
**. Past (ancestral) villages known to key informants from oral traditions
#. The total number of clans resident in villages at the time of consultations
†. The total number of clans with key informants directly involved in consultations (key informants were appointed by the participating communities)
Tangible cultural heritage sites formally recorded during this study

6.1.1 Tangible Cultural Heritage Values

6.1.1.1 Ancestral Village Sites

All village communities maintain oral traditions that recall the names and locations of ancestral villages. In some instances the exact locations of ancestral villages are known, and in others ancestral villages are assigned only to general localities. In total, 80 separate ancestral villages were named during consultations and three of these ancestral village locations were formally recorded during this study (Haralua, Vaii Vavere and Heve). The Popo ancestral village site was formally recorded during surveys in the 1970s (NMAG site code: OAK, see appendix 2). The ancestral villages that were named during consultations do not constitute an exhaustive list of the ancestral villages that are in the PAOI. This is because the names and locations of ancestral villages are often confidential and remain closely guarded by individual clans. The reason for confidentiality is in part due to concerns that the name of an ancestral village known to one clan, could be used by others as a claim to ancestral knowledge and thus to rights in land. Conversely, naming an ancestral village or locality could be interpreted by others as an assertion of ownership and a challenge to other clan rights. Informants representing the four Pawaia-speaking villages chose not to provide the names or locations of ancestral villages known in their oral traditions.

Informants representing six villages in PRL-15 and Riverways areas of the PAOI (Ura, Wabo, Subu 2, Poroi, Kaevaria and Evara) chose to maintain confidentiality regarding ancestral migration stories known in oral traditions. It is however important to note that informants from all six villages confirmed that the names and locations of ancestral villages in remote locations to the north are known in their oral traditions.

Fourteen ancestral villages are named in sequences recorded with informants from Koriki-speaking villages in the Riverways sections of the PAOI. Kauri Nu Poke is the only village that appears in more than one village sequence (Ara'ava and Kairimai). Fifteen ancestral villages are named in sequences recorded at five Iare-speaking villages; none of these names appear in more than one ancestral sequence. Seven ancestral villages were recorded at Kaimare-speaking villages, and 12 at Maipua-speaking Apiope village. The only ancestral village location found in more than one sequence is Subu which was named by informants from Aivai and Apiope villages. It is worth noting that Aivai is named as an ancestral location in the Apiope sequence.

There is a lack of correlation between the ancestral village sequences named by linguistically and culturally related communities. A potential reason for the lack of correlation may be found in village naming protocols. Historical records show that Purari River delta villages were larger in the past, and that they were arranged around up to seven ravi (men's houses) (see Appendix 3). Each of the ravi had its own name and served as the social and cultural locus for one section of the community. Large ancestral villages in the PAOI such as Haralua, Kauri Nu Poke, Old Iare and Vaii Vavere were abandoned in the late nineteenth and/or early part of the twentieth centuries when colonial administrators brought an end to inter village raiding. When sections of these large villages left to form smaller villages, their former village would usually be accorded the name of their ancestral ravi. Thus, the same ancestral village could have different names for different clans. It is therefore likely that the 48 ancestral villages named by Purari River delta communities refer to a smaller number of ancestral village locations.

The two ancestral villages that were formally recorded (Haralua and Vaii Vavere), are located on major tributaries of the Purari River and both are relatively recent in ancestral sequences. In the deeper past, due to head-hunting raids and ritual cannibalism, villages were often located on minor waterways hidden away from larger Purari River tributaries. Therefore, we cannot assume that ancestral villages will be found on the banks of major tributaries as Haralua and Vaii Vavere may suggest.

Moving south to the 15 Orokolo-speaking villages, 32 ancestral villages are named in oral traditions. Heve and Popo are significant locations named in all ancestral sequences and are unknown in the oral traditions of non-Orokolo villages to the north and west (Table 6.1). With the exception of Heve and Popo, there is a lack of correspondence between ancestral village

sequences maintained by otherwise closely related communities. Only near-neighboring Kaivakavu and Larihairu villages share comparable sequences. As is the situation to the north, again it was found that ancestral villages are often accorded the name of a men's house (eravo) and that the same ancestral villages may have different names in different oral traditions.

Although all clans in the study area maintain oral traditions about ancestral villages, the majority of ancestral villages are attributed to general localities rather than exact locations. Ancestral village locations known to Pawaia-speaking villagers are described as being in mountains and caves far to the north and therefore likely outside PRL-15 and the PAOI.

There are four ancestral villages with known locations near the Riverways villages (Table 6.2):

1. Haralua (formally recorded, see Appendix 4).
2. Vaii Vavere (formally recorded, see Appendix 4).
3. Kauri Nu Poke (not formally recorded). Kauri Nu Poke may be an ancestral location for Kairimai, Ara'ava, Ikinu, Kinipu and Akoma villages. Surveys reached an area some 1-2 km southeast of Kauri Nu Poke where an indicative GPS reading was taken.
4. Old Iare (not formally recorded). According to informants, Old Iare is on the river bank a few kilometers upstream from Aumu village. There are apparently shells but no pieces of pottery on the ground at the site.

There are five ancestral villages with known locations in the vicinity of the export pipeline corridor as it approaches the coast at Orokolo Bay (Table 6.2).

1. Heve (formally recorded, see Appendix 4).
2. Popo (previously recorded, see Section 4.2.3).
3. Irapuipiarumirie (not formally recorded). Irapuipiarumirie is around one kilometer west of Popo (indicative location only).
4. Maiaro (not formally recorded). Maiaro is an ancestral village on a hill top near the Ihu Digicel tower. Maiaro is named in the oral traditions of both Kaivakavu and Larihairu villages.
5. Kaukpa Horo (not formally recorded) Kaukpa Horo is some three hours' walk north of Ere-Kilavi village. It is an important place where there are many ancestral burials.

Table 6.2 Importance Ratings for Ancestral Village Sites

Present-day Villages with Connections to Ancestral Villages Recalled in Oral Traditions	Ancestral Village Site	Recoded (Y/N)	Importance			
			Local[1]	Regional[2]	National[2]	International[2]
Ara'ava	Haralua	Y	High	Medium	Low	*
Aivai	Vaii Vaivere	Y	High	Medium	Low	*
Ara'ava, Kairimai, Akoma	Kauri Nu Poke	N	High	High	Medium	*
Auma	Old Iare	N	High	High	Medium	*
Huruta, Paevera, Ere, Kilavi, Avavu, Hepere, Maea, Haevavo, Kaivakavu, Iuku, Larihairu, Mareke, Kavava, Herakela, Lariau	Heve	Y	High	High	*	*
Huruta, Paevera, Ere, Kilavi, Avavu, Hepere, Maea, Haevavo, Kaivakavu, Iuku, Larihairu, Mareke, Kavava, Herakela, Lariau	Popo	†	High	High	High	*
Marea	Irapuipiarumirie	N	High	*	*	*
Ere, Kilavi	Kaukpa Horo	N	High	*	*	*
Kaivakavu, Larihairu	Maiaro	N	High	Medium	*	*

[1]Local importance ratings are based on opinions provided by local informants
[2]Regional, national and international importance ratings are preliminary and attributed by the author based on previously published anthropological and archaeological sources
*There is insufficient information to assign a preliminary importance rating
† Popo was recorded during a previous study

6.1.1.2 Spirit Sites

Informants from Pawaia-speaking villages named 11 spirit sites and three sites were formally recoded (Wabo Kai Seiro, Sasmeia, Subuia) (Table 6.1). Oral traditions from Ura village recall the locations of spirit sites called; Peiweino, Twepei, Wepei, and Joropeswanopon. These sites are all in remote locations north of Ura village and likely outside the PAOI. Informants from Poroi village described spiritually connected sites named Maiebe and Warubeneai that are on the banks of Purari River however, details of the sites' locations were not divulged during consultations. A senior representative from Poroi also provided descriptions of a spirit site complex, and traditional hunting area, which has been given the name "PRL-15 oxbow wetlands" for the purposes of this report (see Appendix 4).

Four spirit sites were formally recorded at the Koriki-speaking villages of Ara'ava and Kairimai (Lavi, Mae, Vaii Veruku and Vaukaea) however, informants expressed no knowledge of any spirit sites other than the four sites that were recorded at their villages. Informants from Koriki-speaking Kairu'u village said that they attach low importance to traditional spirit sites because they maintain Christian values. However, Kairu'u informants did name two spirit sites. Alau Kaipu located at the river mouth south of the village which is spiritually inactive although the spirit can be heard in the form of waves crashing on the beach at night, and Aua Euao which is located many hours' walk inland from Kairu'u village. Although according to informants both sites are of low significance, they were important enough to be named in discussions, and may remain important to villagers who were not represented during consultations.

The five Iare-speaking villages named two spirit sites in total. Akia Ini Laua was formally recorded with informants from Aivai village (see Appendix 4). The site comprises two small streams and a spirit tree; each of the three components of the site is vulnerable to changes in alluvial or riverine conditions. Aumu village informants named a spirit site called Mairi Vaara, which is located near Poroi village.

Maipua-speaking Apiope village named a spirit site called Yemelavi that takes the form of an eagle in the nearby river mouth. Although the site is considered of low importance because traditional spirit sites are viewed as inconsistent with Christian values, the site may remain

important to villagers who maintain traditional spiritual values, or as justification for clan rights in surrounding lands.

As a consequence of missionary activity, spirit sites are rare in Orokolo Bay. There are tensions between traditional and Christian spiritual perspectives and as a consequence spirit sites are often not discussed in community forums. Heve Hill (see Appendix 4) and Ape Ohoro are the only two active traditional spirit sites that were described as important by Orokolo communities. Ape Ohoro is some half a day's walk inland from Herakela and Lariau villages. Further questioning about the site's location failed to produce additional information. The lack of response from informants does not imply that Ape Ohoro is not an important site because discussions about traditional spirit sites were viewed unfavorably by some of the informants involved in consultations. However, enough was said to confirm that Ape Ohoro is important to some community members; it remains unclear whether Ape Ohoro is inside the PAOI.

Other spirit sites named by Orokolo-speaking informants are Arara Kaipu and Moro Kaipu. The exact locations of these two sites are known to Ere and Kilavi village informants however, the sites are no longer spiritually active and little information was offered about the sites. Informants from Harevavo village named two spirit sites related to Biblical events; the Epe Loaki spirit site which is on Adele Island in the Adele River, and Hari Hoho Creek (also known as Hihovu Creek) which is at the base of Heve Hill. Concerns were raised about Christian-period cemeteries that are located close to the northern margins of most of the present-day beach-fronting Orokolo Bay villages. These cemeteries have come to represent important spiritual and ancestral locations (see Appendix 3). They are generally small in area and unique to each village. The scale of Figure 6.2 prevents small cemeteries from being shown, however cemeteries are shown on individual village maps in the Community Directory (Finlayson 2017, Attachment 2).

Tangible spirit sites recorded in the PAOI and their importance are shown in Table 6.3.

Table 6.3 Importance Ratings for Tangible Spirit Sites

Present-day Villages with Connections to Spirit Sites Recalled in Oral Traditions	Spirit Site	Recoded (Y)	Importance			
			Local[1]	Regional[2]	National[2]	International[2]
Ura	Wabo Kai Seiro	Y	High	Low	Low	Low
Wabo	Sasmeia	Y	High	Low	Low	Low
Subu, Ura	Subuia	Y	High	High	Low	Low
Ara'ava	Lavi	Y	High	Low	Low	Low
Ara'ava	Mae	Y	High	Low	Low	Low
Ara'ava	Vaii Veruku	Y	High	Low	Low	Low
Kairimai	Vaukaea	Y	High	Low	Low	Low
Aivai	Akia Ini Laua	Y	Medium	Low	Low	Low

[1]Local importance ratings are based on opinions provided by local informants

[2]Regional, national and international importance ratings are preliminary and attributed by the author based on previously published anthropological and archaeological sources

6.1.1.3 Archaeological Sites

One archaeological site, a scatter of pottery sherds, was identified during the social baseline study. This site was recorded in an area cleared for gardens north of Heve Hill (see Figure 6.2). As the garden area did not have a local name the site was given the field code JP11.

Archaeological sites are unknown in PRL-15 and the northern part of the PAOI but sites are known to be present at distant inland locations by informants from two of the four Pawaia-speaking villages. The paucity of archaeological materials in PRL-15 and the PAOI is consistent with previous studies that suggest the area has only ever been sparsely populated and that evidence of cultural activity would quickly disappear in the tropical environment. Informants from

five of the 11 Riverways villages have knowledge of archaeological sites on their clan lands. In each instance, archaeological materials occur as shells, stones or pieces of pottery at ancestral village sites. No informants from Riverways villages reported uncovering archaeological materials while gardening suggesting that archaeological sites are likely to be rare or deeply covered by sediments in the deltaic landscape.

The situation to the south is very different where informants from all 15 Orokolo-speaking villages reported regularly uncovering archaeological materials when gardening. The abundance of archaeological materials in Orokolo Bay suggests that there has been a considerable amount of cultural activity in the area and that people have been there for some time. An additional factor contributing to the abundance of archaeological sites is that people have been using clay pots for hundreds of years, or longer. Pieces of pottery survive well in archaeological contexts whereas items such as the bamboo containers used for cooking and as food containers leave no archaeological record.

Archaeological sites and materials are almost unavoidable in Orokolo Bay during activities that disturb the ground surface. Larihairu village informants describe finding pottery sherds "everywhere" when gardening inland from the coast. Informants from Kaivakavu and Iuku cited the Popo area in particular, as a place where pottery sherds are abundant in gardens. Village gardens in Orokolo Bay are located in well-drained areas with sandy substrates formed from deflated sand dunes and old beach planes. These are also the land systems were ancestral villages are most likely to be found (see Section 4.3.1). Unambiguously determining the significance of archaeological sites in the study area will depend on the results of systematic archaeological surveys, archaeological excavations and analyses.

6.1.1.4 Women's Sites

Women were invited to participate in all cultural heritage consultations and were represented during consultations at seven villages. The Moiwailedsa women's site was identified and described by informants from Ura village (women were not represented during consultations, see Appendix 5). Moiwailedsa was attributed high local importance. A women's site called Vaea was identified at Apiope village where women were represented during consultations. Vaea was attributed low local importance. Women's sites are known but were not named at a further three villages (Paevera, Avavu and Hepere). Women were not represented during consultations at these three villages.

6.1.1.5 Ancestral Heirlooms

Nineteen villages reported keeping ancestral heirlooms in the form of stone tools, shell valuables and clay pots. Stone axe/adze tools are kept at two Pawaia speaking villages. Of the six Koriki-speaking villages, only Ara'ava possesses ancestral heirlooms. According to informants the two shell valuables that remain at Ara'ava were hidden in the bush during the time of the Kabu Movement[4], all other Koriki ancestral materials were destroyed at that time (see Appendix 3). Nearer to the coast, shell valuables are far more common. Also nearer to the coast three villages (Upia, Ere and Kilavi) keep examples of *hiri* trade pots. Ancestral heirlooms are usually stored away although shell valuables are worn as part of traditional dress by women from five villages (Evara, Paevera, Harevavo, Iuku, and Mareke). Shell valuables are exchanged as part of traditional bride price by Evara, Apiope, Huruta and Mareke villagers.

During his research in the Purari River area, Joshua Bell (2003: 114) found that "surviving ancestral heirlooms which, individually owned, have emerged as reinvigorated markers of identity, history and resource ownership". A recent increase in the significance of ancestral heirlooms was

[4] The Kabu Movement was a progressive economic and cultural movement in Papua New Guinea in the 1950s, which advocated the destruction of material cultural and the adoption of European ideas (Maher 1958, 1984; for detailed descriptions see appendix 3).

apparent during consultations at Harevavo village. There, we were shown a single arm shell. Such an item is not remarkable and is common in the region. Today, the arm shell is the only surviving ancestral heirloom in the village and it has become a potent symbol of connections to peoples' ancestral past. Similar to the ways that the Harevavo arm shell has grown in importance, it may be expected that ancestral heirlooms will become increasingly important to future generations living in the Purari River delta and Orokolo Bay. Informants from Mareke village described that some three years ago, a German national purchased the last ancestral wooden artefact owned by the community for PGK 3,000 (approx. USD 935). The artefact was made in the village Eravo and was all that survived the destruction of material culture during the Vailala Madness[5]. The community deeply regret losing the artefact. It has long been the practice of explorers, ethnographers and government workers to purchase items of material culture from villagers (Rhoads 1984). Ancestral heirlooms are kept by 24 villages in the PAOI (i.e. 71% of villages maintain portable cultural items that are material reminders of their ancestral past) and in all cases these items are of high local importance to communities.

6.1.2 Intangible Cultural Heritage Values

During consultations, 15 types of intangible cultural heritage values were recorded (Table 6.4). These intangible cultural heritage values are discussed under six classifications:

1. Language.
2. Ancestral Oral Traditions.
3. Spirit, Ritual and Sacred Oral Traditions.
4. Song, Dance and Traditional Dress.
5. Traditional Subsistence Knowledge.
6. Traditional Medicines.

Table 6.4 Intangible Cultural Heritage Values

Present-day Village	Language	Oral Traditions		Traditional Sing Sing				Traditional Dress (Women)	Sago Processing		Hunting		Fishing		Traditional Medicines
		Ancestral Histories	Spirit/Ritual/Sacred	Song (Men)	Dance (Men)	Song (Women)	Dance (Women)		Material Culture	Ritual	Material Culture	Ritual	Material Culture	Ritual	
Ura	**Pawaia**	a	a	b	b	a	a	n	a	n	a	a	a	a	a
Wabo		a	a	b	b	b	b	n	a	n	a	a	a	n	a
Subu 2		a	a	b	b	a	a	a	a	n	a	b	a	b	a
Poroi		a	a	b	b	a	a	a	a	a	a	a	a	a	a

[5] Vailala Madness was a religious movement in in the Gulf region of Papua New Guinea (1919-1931) where it was prophesized that a steam ship would come with the spirits of ancestors and cargo of European goods. It resulted in traditional rituals being abandoned, the attack of cultural objects and rejection of personal adornment. (Williams 1940, 1976; for detailed descriptions see appendix 3).

Table 6.4 Intangible Cultural Heritage Values (cont'd)

Present-day Village	Language	Oral Traditions		Traditional Sing Sing				Traditional Dress (Women)	Sago Processing		Hunting		Fishing		Traditional Medicines
		Ancestral Histories	Spirit/Ritual/Sacred	Song (Men)	Dance (Men)	Song (Women)	Dance (Women)		Material Culture	Ancestral Histories	Spirit/Ritual/Sacred	Song (Men)	Dance (Men)	Song (Women)	
Ara'ava	Koriki	a	a	a	a	a	a	n	a	b	a	b	a	b	a
Kairimai		a	a	a	a	a	a	b	a	n	a	n	a	b	a
Kairu'u		a	a	a	a	a	a	b	a	n	a	a	a	a	a
Akoma		a	n	a	a	a	a	b	a	n	a	a	a	a	a
Ikinu		a	n	a	a	a	a	a	a	a	a	a	a	a	a
Kakari		a	n	a	a	a	a	a	a	a	a	a	a	a	a
Mapaio	Iare	a	b	n	n	a	a	a	a	b	a	a	a	b	a
Kaevaria		a	b	a	a	a	a	b	a	a	a	a	a	a	a
Aivai		a	b	b	b	b	b	n	a	n	a	n	a	n	a
Aumu		a	a	b	b	b	b	n	a	n	a	a	a	a	a
Maipenairu		a	a	a	a	a	a	a	a	a	a	a	a	a	a
Evara	Ahia	a	a	a	a	a	a	a	a	a	a	a	a	a	a
Upaia	Kaimare	a	a	a	a	a	a	b	a	a	a	a	n	a	a
Mariki		a	a	a	a	a	a	a	a	a	a	a	a	a	a
Apiope	Maipua	a	a	a	a	a	a	n	a	n	a	n	a	n	a
Huruta	Orokolo	a	b	b	b	b	b	n	a	n	a	a	a	a	a
Paevera		a	b	a	a	a	a	a	a	a	a	a	a	a	a
Ere		a	a	a	a	a	a	a	a	a	a	a	a	a	a
Kilavi		a	a	a	a	a	a	a	a	a	a	a	a	a	a
Avavu		a	a	a	a	a	a	a	a	a	a	a	a	a	a
Hepere		a	b	a	b	a	a	a	a	a	a	a	a	a	a
Marea		a	n	n	n	n	n	n	a	a	b	a	b	a	a
Harevavo		a	a	a	a	a	a	a	a	a	a	a	a	a	a
Kaivakavu		a	n	a	a	a	a	n	a	a	a	a	a	a	a
Iuku		a	n	a	a	a	a	a	a	a	a	a	b	a	a
Larihairu		a	n	n	n	n	n	b	a	a	a	a	a	a	a

a = active cultural heritage value (passed between generations)
b = non-active cultural heritage value (not passed between generations)
n = cultural heritage value absent

6.1.2.1 Language

Seven languages belonging to the Trans-New Guinea family are spoken in the study area (Pawaia, Koriki, Iare, Ahia, Kaimare, Maipua and Orokolo). The survival of these seven languages is potentially important at local, national and international scales and may represent critical cultural heritage values as defined by IFC Standard 8, Cultural Heritage (see Section

2.2.2). Consultations were held at four Pawaia-speaking villages, five Iare-speaking villages, six Koriki-speaking villages, two Kaimare-speaking villages and single villages speaking Ahia and Maipua languages. To the south, in Orokolo Bay, consultations were held at 15 Orokolo-speaking villages. Orokolo informants reported local dialectic variations although these dialects belong to a single mutually intelligible Orokolo language. Although more than one language is learned, traditional languages are the first language for all villagers. Villagers usually have degrees of fluency in other Papuan languages as well as Tok Pisin and sometimes Hiri Motu and English. Informants representing six villages in the PAOI (Ura, Evara, Mariki, Maipenairu, Aumu and Kavava) expressed concerns about the future maintenance of their traditional languages.

During the 1940s-1960s, Tom Kabu advocated that people should abandon their traditional languages and adopt the pidgin language Hiri Motu. As a consequence of Tom Kabu's advocacy, Hiri Motu remains the preferred language for a number of elderly villagers. However, today Hiri Motu is declining in use and is being replaced by Tok Pisin, which has become the national lingua franca. Tok Pisin was known by all key informants with the exception of elders at Paevera village. English is known by many villagers however as English is rarely used in villages, few people maintain fluency.

Pawaia is the day-to-day language used in Ura, Wabo, Subu and Poroi villages. Informants from Ura village expressed their concern that the Pawaia language is less often used as a consequence of immigration by speakers of other languages. An informant reported a similar problem at Ahia-speaking Evara village, which there may be a result of inward migration and economic change brought by local logging activities.

Tom Kabu's first language was Iare, although he did claim that he had forgotten how to speak it. The survival of the Iare language during the Kabu Movement is testimony to the fundamental strength of Papuan languages in the Purari River delta during the past 70 years. Nevertheless, looking to the future, Iare-speaking informants from Aumu village expressed their concern that they are witnessing a decline in the use of Iare language because younger people prefer to use Tok Pisin and English. Informants representing Iare-speaking Mapaio, Kaevaria and Aivai villages believe that their communities are maintaining Iare language and did not express concerns like those of informants from Aumu village.

Traditional language maintenance varies from village to village on the Orokolo coast with informants from Kavava village reporting a decline in the use of Orokolo language because young people preferred to use Tok Pisin, whereas informants from Herakela were optimistic about the maintenance of the Orokolo language. Kavava village informants also cited marriage to partners from outside Orokolo Bay, and the need for young people to seek educational and employment opportunities outside Orokolo Bay, as negatively impacting the maintenance of Orokolo language. Informants from Huruta village highlighted the cultural role of language explaining that cultural heritage values can only be fully expressed and understood in the language that created them.

In summary, all 34 villages maintain intangible cultural heritage values in the form of traditional languages that are used day-to-day in villages and are fundamental to maintaining cultural identity. Communities affected by changing economic situations and inward migration voiced concerns that the use of traditional language is being eroded. In addition, a lack of access to education and employment opportunities is viewed as a key factor drawing young people away from villages and compromising the maintenance of traditional languages.

6.1.2.2 Ancestral Oral Traditions

All communities maintain intangible cultural heritage values in the form of oral traditions detailing ancestral migration stories that trace clan origins. These oral traditions are key to maintaining individual clan identity and are highly important at a local level. All oral traditions described during consultations trace clan origins inland and often trace origins to highland locations outside the PAOI. From there, migrations generally track southward toward the headwaters of the Purari River. The exceptions are oral traditions told at Marea, Iuku and Kavava villages in eastern Orokolo Bay; their migrations commence from the Vailala River headwaters to the northeast.

Specific details about ancestral migrations are usually confidential within clans and with the exception of Upaia village where ancestral migration stories are taught to boys and girls, the details of ancestral migrations are passed from father to son. Informants representing Ere and Kilavi villages expressed their concern that as ancestral migration stories are maintained by individual clans, these oral traditions are more vulnerable to loss than would be the case if they were shared by the broader community.

Social disruption and changing environmental conditions are cited as reasons motivating ancestral migrations. Coastal progradation is a core theme in the oral traditions of ten villages (Kairimai, Kaevaria, Upaia, Harevavo, Kavava, Kaivakavu, Larihairu, Iuku, Marea and Mareke). According to oral traditions from Kairimai village, when their ancestors lived in the Purari headwaters, waves broke on beaches near Herd Base. Oral traditions from Kaevaria village similarly describe the sea reaching beaches near Poroi.

Moving to the south (along with the prograding coastline), oral traditions recalled at Iuku and Larihairu villages describe a time when waves lapped beaches along the northern margin of Orokolo Bay 3-5 km inland from today's coastline (see Appendix 5). Oral traditions from Iuku village also recall a later time when their ancestors retreated in terror when they first encountered waves crashing on the shore at Heve Hill (for descriptions of similar oral traditions see, Holmes 1903: 130-131).

6.1.2.3 Spirit, Ritual and Sacred Oral Traditions

Intangible cultural heritage values are maintained in oral traditions with traditional spiritual themes by the four Pawaia-speaking villages and three of the six Koriki-speaking villages, the exception being coastal Koriki villages where missionaries have been most active. Oral traditions with spiritual themes are maintained by two of five Iare-speaking villages. Oral traditions with spiritual themes are maintained at villages speaking Ahia (Evara), Kaimare (Upaia and Mariki) and Maipua (Apiope) languages. The situation is different in Orokolo Bay where oral traditions with traditional spiritual themes are being taught to young people in just six of 15 villages. The erosion of traditional spiritual values in Orokolo Bay reflects increased missionary activity nearer to the coast. Traditional spiritual values conflicting with Christian values are often not freely discussed in Orokolo villages and there may be more traditional spiritual values maintained by villagers in Orokolo Bay than were disclosed during consultations. As one informant from Larihairu village wisely pointed out; "today spirits are hidden but they still exist".

6.1.2.4 Song, Dance and Traditional Dress

Intangible cultural heritage values in the form of song and dance are maintained by 22 out of 34 (65%) villages in the PAOI.

In PRL-15 and Riverways villages, men's song and dance is no longer practiced by the four Pawaia-speaking villages or three of the five Iare-speaking villages. Traditional men's song and dance is performed by Koriki (Ara'ava, Kairimai, Kairu'u, Akoma, Ikinu and Kakari), Ahia (Evara), Kaimare (Upaia) and Maipua (Apiope) speaking villagers. Seven villages that no longer practice traditional forms of men's song and dance do have knowledge of men's song and dance suggesting that these practices have diminished only within the lifetimes of the current adult generation.

In villages further to the south, three Orokolo-speaking villages (Marea, Larihairu and Kavava) have no knowledge of traditional men's song and dance and in one village (Huruta) men's song and dance is remembered but no longer performed. Overall, the data suggests that men's song and dance fell from favor earlier nearer to the coast before a similar trend commenced in PRL-15 and Riverways communities. In villages where men's song and dance is performed, these intangible cultural heritage values are of high local importance.

Women's song and dance is performed in 16 (84%) of the 19 PRL-15 and Riverways villages. In the three villages where women's song and dance is no longer performed, details of songs and dances are still remembered suggesting that knowledge has faded only within recent decades. In

Mapaio village, song and dance plays a key role in educating young women about becoming a wife and a mother in Mapaio society.

The maintenance of intangible cultural heritage values expressed in traditional forms of song and dance has been vulnerable to recently changing social circumstances. With the passing of the current adult generation, song and dance appear likely to cease being performed in at least eight (24%) of the 34 villages surveyed. Knowledge of song and dance has already disappeared from community knowledge in four (12%) villages (Mapaio, Marea, Larihairu and Kavava). In the 29 villages where traditional women's song and dance is performed, performances are of high local importance for 23 villages (79%) and medium importance for six villages (21%). For Kaivakavu village, the cultural importance of song and dance lies in adaptive qualities. Informants pointed out that the themes in their song and dance have changed to suit changing social situations and that today's themes are different to those of 50-60 years ago.

Forms of traditional dress are maintained by women from 16 (47%) of 34 villages in the PAOI (Plates 6.1 and 6.2). Amongst these 16 communities, traditional dress has high local importance for 13 villages (81%), medium importance for one village (6%), and low importance for two villages (13%). In six (18%) of the 34 villages, knowledge of women's traditional dress appears likely to disappear within the life time of the current adult generation. Women's traditional dress in the form of grass skirts used in Orokolo Bay appear likely to be maintained for longer than traditional dress made of tapa cloth that was used further from the coast.

Plate 6.1 Traditional Dress and Dancing (Kaevaria)

Plate 6.2 Traditional Dress (Evara)

6.1.2.5 Traditional Knowledge: Subsistence Activities

Traditional knowledge about making the tools and materials used for processing sago is maintained by all 34 villages in the PAOI, and 22 of these also use rituals to enhance sago yields. Rituals to increase sago yields are most common in Orokolo Bay where they are practiced by 14 of 15 villages. Traditional knowledge about making the tools and materials used for hunting is maintained by 32 villages and hunting rituals or hunting magic is used by 29 villages including all 15 Orokolo Bay villages. Traditional knowledge used to make the tools and materials used for fishing is maintained by 29 villages. Four villages in beach-fronting locations that rely heavily on fishing have abandoned traditional tools and materials in favor of manufactured nylon nets and lines, which increase their catch. Fishing rituals are practiced by 27 villages including all 15 Orokolo-speaking villages.

Ritual mediation is used by 29 of 34 communities to manage subsistence resources. For example, contrary to the waning of most other traditional ritual practices in Mapaio village, hunting magic has increased in importance as game animals have become more difficult to find in the area. Ancestral knowledge related to subsistence needs is maintained and highly important to all communities in the PAOI. As well as providing subsistence security, ancestral knowledge related to subsistence strategies connects people to their ancestral pasts and is intrinsic to community identity.

The sentiments expressed by informants from Wabo village about their use of ancestral knowledge in subsistence activities may be applied more broadly to the study area. They have been approached about various future infrastructure developments and related benefits in the PRL-15 area since 1975. However, in their view, nothing has changed over the past 40 years and people are skeptical about what may happen in the future. Because of long-term uncertainty

about future developments, people place increased importance on maintaining intangible heritage values that provide for self-reliance and subsistence security. The experience of informants from Wabo alerts to the need to ensure that changing economic circumstances do not compromise intangible cultural heritage values that maintain self-reliance for communities in the PAOI.

6.1.2.6 Traditional Medicines

Ancestral knowledge about traditional medicines has high local importance for all 34 villages in the POAI and all communities have high levels of confidence in the effectiveness of traditional medicines. Aumu and Apiope informants emphasized their complete reliance on traditional medicines explaining that their communities have no viable alternatives. Informants from Larihairu, Marea and Harevavo villages said that in their experience, traditional medicines are both more effective and more reliable than western medicines.

The poor quality of medical care provided by aid posts is cited as enhancing the local importance of maintaining traditional medicinal knowledge. For example, informants from Ura village said that women preferred to use the traditional Moiwailedsa birthing site because the nearby aid post is poorly staffed. In some instances aid posts are viewed as a back up to traditional medicines Herakela and Kaivakavu villagers only go to the aid post if traditional medicines don’t work. As is the situation with knowledge related to subsistence activities, medicinal knowledge plays an importance role in the everyday lives of all communities.

7. Conclusions

Papua New Guinea is home to people who speak more than 800 individual languages. Such extraordinary cultural diversity is vulnerable to socio-cultural changes introduced by outsiders however, it would be an oversimplification to say that one area of Papua New Guinea is culturally richer than another, or that one area is more sensitive to change than another. Cultures of the Purari River and Orokolo Bay regions are better represented in historical and anthropological literature than many cultures in other parts of Papua New Guinea. As a consequence of the regions prominence in anthropological discourse, it may appear that the area is culturally richer or more sensitive to change than other parts of Papua New Guinea, but this is not necessarily so.

Adequate information has been collected through consultations with communities to characterize the ethnographic and cultural heritage landscape of the study area. A summary of the tangible and intangible cultural heritage values identified is presented below.

7.1 Tangible Cultural Heritage Values

7.1.1 PRL-15

Pawaia communities living in PRL-15 place high values on spirit sites. During consultations spirit sites were described as being in remote locations and it remains unclear whether Pawaia spirit sites are inside the PAOI.

There are no known archaeological sites in PRL-15 and it is highly unlikely that archaeological surveys would identify any sites in the area. Although archaeological sites are rare, they are not absent and may be encountered during Project activities. Because of their rarity, archaeological sites in PRL-15 should be considered very important (see Section 4.2.2).

7.1.2 Riverways

Along the major Riverways in the PAOI, village relocations often occur just decades apart due to changing environmental conditions. As a consequence, there are likely to be numerous short-term occupation sites in the area. Ethnographic accounts describe people relying on waterways for transport and communication and past settlements have probably always been close to waterways of some kind. However, it is likely that villages on major Riverways are no more than 150 years old, and that pre-contact villages were located in more secluded areas to avoid attack (see Appendix 3). Due to rapid rates of siltation, past occupation sites are likely buried below sediments and further surveys are unlikely to document any archaeological sites that are not already known to local informants.

7.1.3 Export Pipeline Corridor (Orokolo Bay)

Oral testimonies suggest that archaeological sites are abundant on the degraded dunes and beach plains near Muro and in Orokolo Bay. Oral traditions recall regular village relocations and linguistic research suggests that migrations tracked predominantly toward the east. Therefore, archaeological sites dating to the past few hundred years are expected to be more numerous in eastern parts of Orokolo Bay. Heve Hill and Popo are the two most important cultural areas in Orokolo Bay (see Section 4.3.2 and Appendix 4).

Archaeological research at other locations on the south coast of Papua New Guinea in conjunction with modelling based on geographic processes alerts to the potential for nationally and internationally significant archaeological sites to be located on degraded dunes and beach plains at the base of the coastal hills fringing Orokolo Bay to the north, as well as in the coastal hills themselves (see Section 4.2.2 and Section 4.2.3). Because of the lack of knowledge about archaeological heritage sites in the PAOI (particularly in parts of Orokolo Bay), all sites in archaeologically prospective areas could be defined as nonreplicable cultural heritage sites under IFC Standard 8, Cultural Heritage.

7.2 Intangible Cultural Heritage Values

Over the past 140 years, the intangible cultural heritage values of communities in the PAOI areas have changed in response to external influences and generational transition. Intangible cultural heritage values have been impacted by regulations introduced by colonial and government administrators, the activities of missionaries, the Vailala Madness and the Kabu Movement. The historical events that eroded cultural heritage values also saw the introduction of limited infrastructure in the form of schools, aid posts and mission stations. In some respects, the infrastructure that was introduced was brought there to replace cultural values that were compromised. However, for some time now, infrastructure and facilities in the region have been subject to neglect and decay which has been to the detriment of communities maintaining their cultural heritage values.

Regardless of the events of the past 140 years intangible cultural heritage values expressed in spiritual and cultural practices, subsistence activities and ways of mediating the physical world have been maintained throughout the PAOI. Intangible heritage values remain as testimony to the social and cultural resilience of communities in the region.

8. Study Team

Dr Robert Skelly and John Sepe (Social Research Institute) undertook the cultural heritage consultations and mapping with communities in the PAOI. Robert Skelly prepared the Upstream Cultural Heritage and Archaeology Baseline Report in collaboration with Social Research Institute.

9. Abbreviations

AAA: Australian Archaeological Association

AOI: Area of Influence

AGRU: Acid Gas Removal Unit

BP: Before Present (radiocarbon dating present = 1950)

Cal: Calibrated (radiocarbon date)

CE: Common Era

CPF: Central Processing Facility

ESMS: Environmental and Social Management System

GPS: Global Positioning System

HTL(E): Hiri Trading Language (Eleman variety)

HTL(K): Hiri Trading Language (Koriki variety)

ICOMOS: International Council on Monuments and Sites

ICP: Informed Consultation and Participation

IFC: International Finance Corporation

LLG: Local Level Government

LNG: Liquefied Natural Gas

NCPP Act: National Cultural Property (Preservation) Act

NMAG: National Museum and Art Gallery (Papua New Guinea)

PAOI: Project Area of Influence

PER: Pipeline Export Route

PRL: petroleum retention license

UNESCO: United Nations Educational, Scientific and Cultural Organization

WAC: World Archaeological Congress

WGS 84: World Geodetic System

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Appendix 1
NMAG Permit for Cultural Heritage Mapping

PNG NATIONAL MUSEUM & ART GALLERY

P.O. BOX 5560, BOROKO, PAPUA NEW GUINEA
Telephone: 3252405 Fax: 3251779 Email: nationalmuseum@museumpng.gov.pg Webpage: www.museumpng.gov.pg

PERMIT FOR CULTURAL HERITAGE MAPPING IN PAPUA NEW GUINEA

PERMIT 001

Permission is granted to JOHN SEPE & DR ROBERT SKELLY

(as required by the *National Cultural Property Schedule* for 18 May 1967) for consultation and physical cultural heritage mapping of tangible and intangible cultural heritage inclusive of archaeological, traditional, social, historical, natural sites at both marine and terrestrial environments in THE PURARI DELTA AND OROKOLO BAY COMMUNITIES, KIKORI-BAIMURU DISTRICT, GULF PROVINCE

Providing you agree to the following conditions:

1. The cultural heritage mapping permit should not be used to conduct archaeological surveys and/or excavations, neither should be used to collect, move, relocate and modify, deface any cultural properties and/or content of a site.
2. Provide to NMAG a proposal specifying plans for documentation of intangible and tangible components of indigenous cultural heritage and living components.
3. Conduct (a) oral documentation of spatial arrangements of cultural properties, and (b) physical cultural heritage landscape mapping.
4. Applicable only for field site (s) covered in application and only for period specified in this permit document.
5. Permit will only be issued under an individual's name and to persons with cultural heritage management background.
6. Provide resumes of archaeologists and anthropologist and/or competent cultural heritage specialists.
7. Provide material evidence of valid visa and work permit if you are participating in consultancy work.
8. Submit report of your field activities and findings to Curator of Prehistory within one month of completion of your fieldwork.
9. Ensure impartial and independent reporting to NMAG upon discovery of cultural properties including reporting on deliberate and/or accidental damages to known (existing) or undocumented cultural heritage properties.
10. Unrestricted accessibility for inspection and monitoring by officers and/or authorised agents of the NMAG
11. We also request that subsequent publications, thesis, reports and a representative selection of black/while photographs and slides taken should be sent as and when they become available. A copy of any unpublished formal lectures and seminars on your fieldwork and field findings should also be sent.
12. Person (s) who breach conditions of a permit and/or who have been blacklisted will not be issued permit.
13. NMAG reserves the right to refuse, cancel or withdraw the permit at any time if the terms and conditions of the permit are abused, or change at any time.

Validity period of Permit: 3 MAY 2016 – 30 NOVEMBER 2016

Permission is granted by

ALOIS KUASO

Date: 02 MAY 2016

BOARD OF TRUSTEES COMMON SEAL NATIONAL MUSEUM AND ART GALLERY

I accept the above conditions

Address: SOCIAL RESEARCH INSTITUTE
PO BOX 172
UNI PO
NATIONAL CAPITAL DISTRICT
PAPUA NEW GUINEA

02-05-16.

Appendix 2
Results from National Site Register Record Search

Appendix 2: Results from National Site Register Record Search: Sites in Gulf Province

The national site record register search was undertaken by John Muke from Social Research Institute, Papua New Guinea in June 2016 (NMAG site codes commencing with 'O' are located in Gulf Province. The first site recorded in Gulf Province was given the site code OAA, the second OAB and the third OAC. This method of alphabetic sequencing has continued in the same manner as more sites have been registered).

NAMG site code	Location	Map	Recorder
OAA	Epo Plantation, Kerema	Kerema	R.D. Mackay 1969
OAB	Epo Plantation,Kerema	Kerema	R.D. Mackay 1969
OAC	Aird Hill, northern end of Samoa Village	Kikori	S. Bowdler 1971
OAD	Veriu VC Station,Kikori	Kikori	S. Bowdler 1971
OAE	Old Village, Kutume, Veiru	Kikori	S. Bowdler 1971
OAF	Old Village, Aimile, Veiru	Kikori	S. Bowdler 1971
OAG	Old Village, Buo, Veiru	Kikori	S. Bowdler 1971
OAH	Dopima Village, Goiaribari Island	Kikori	T. Shulze 1988
OAI	Kuma Kuma Hill		G. Trompt 1974
OAJ	Old Village Site, Kebaro	Ihu	Koerema 1974
OAK	Open Site, Popo, Ihu	Ihu	Koerema 1974
OAL	Ario Hill, Morehau & Kerema site	Malalaua	P. Swadling 1974
OAM	Tei Hill, Iokea Village	Malalaua	P. Swadling 1974
OAN	Cape Possession	Waima	P. Swadling 1974
OAO	Salt Sprin, Lake Tebera	Karimui	J. Kolia 1975
OAP	KinoMere village	Deception	
OAQ	PAD (Rockshelter, Karimui	Karamui	J. Kolia 1975

Appendix 2: Results from National Site Register Record Search: Sites in Gulf Province (cont'd)

NAMG site code	Location	Map	Recorder
OAR	Pilimu, Korua, village	Deception	J. Kolia 1975
OAS	Popo (popu) Malalaua	Malalaua	J. Kolia 1975
OAT	Morase Hill, Koaru village	Malalaua	J. Kolia 1975
OAU	Karama, Koaru village	Malalaua	J. Kolia 1975
OAV	Ario site, Cape Possession	Waima	J. Kolia 1975
OAW	Nikokupura, Mairu Village	Malalaua	J. Kolia 1975
OAX	Laepa, Miaru village	Malalaua	J. Kolia 1975
OAY	Pop (Popu) Mrirwase village	Ihu	J. Kolia 1975
OAZ	Opa, Keema	Kerema	J Kolia 1975
OBA	Silo Kerema	Cupola	J Kolia 1975
OBB	Migration Site- Uamai	Cupola	J. Kolia 1975
OBC	Kaiakona, Murumuru	Malalaua	J. Kolia 1975
OBD	Ailavokari, earlier village site	Kerema	J. Kolia 1975
OBE	Lakoho migration site	Ihu	J. Kolia 1975
OBF	Kauvu Kavu		J. Kolia 1975
OBG	Areaba, Kerema area		J. Kolia 1975
OBH	Tanata, site in Kerema area	1	J. Kolia 1975
OBI	Uari origin Site	Malalaua	J. Kolia 1975
OBJ	Aviaki migration sit	Malalaua	J. Kolia 1975
OBK	Mou hill,lower Biaru River		J. Kolia 1975

Appendix 2: Results from National Site Register Record Search: Sites in Gulf Province (cont'd)

NAMG site code	Location	Map	Recorder
OBL	Purumi, migration site		J. Kolia 1975
OBM	Ihu origin site,Sambaigi valley	Ihu	J. Kolia 1975
OBN	Agu,mt. Murray,Sambaigi	Erave	J. Kolia 1975
OBO		Kerabi	J. Kolia 1975
OBP	Yoso,Upper Elusu	Kerabi	J. Kolia 1975
OBQ	Wepi Creek,migration site	Erave	J. Kolia 1975
OBR	Elusu,north of Kikoro	Kerabi	J. Kolia 1975
OBS	Hahipile-origin site	Kerabi	J. Kolia 1975
OBT	Dapeareke-migration site	Kerabi	J. Kolia 1975
OBU	Aiyabu,mouth of Kikori R	Kikori	J. Kolia 1975
OBV	Moveave-origin site	Malalaua	J. Kolia 1975
OBW	PAE		
OBX	PAF		
OBY	PAG		
OBZ	PAH		

Appendix 3
Ethnographic Background to the Study Area

Table of Contents

1. Pawaia **1**

2. Purari River Delta **2**

3. Orokolo Bay **4**

4. Burial Practices **6**

5. Missionary Activity **8**

6. Tom Kabu and the New Men **10**

7. References **12**

1. Pawaia

In the early 1970s, some 800 Pawaia people occupied temporary encampments in northern parts of Purari River Basin (Egloff and Kaiku 1983: 475). Although their numbers were small, linguistic research suggests that Pawaia people have lived in the area for a considerable period of time (Franklin 1975, cited in Warrillow 1983: 446). Contact with outsiders has been historically less frequent than has been the case for groups living nearer to the coast. The early explorer James Chalmers sailed part way up the Purari River in 1883 and Theodore Bevan reached as far as Poroi in 1890. Sir William McGregor travelled furthest, reaching beyond present-day Wabo in 1893 and 1894. The observations of nineteenth century explorers, missionaries and government officials suggest that at that time, the upper reaches of the Purari River were sparsely populated. It was not until the 1920s that government patrols made regular contact with Pawaia people and patrols remained infrequent until the 1950s (Warrillow 1983).

While documenting aspects of Pawaia culture in the 1970s, Toft (1983) found no evidence that people identified to clan units and noted that there is no Pawaia word for clan. Toft found that village organisation was based on patrilineal “kin groups” sharing residence in the same village. Today however, as a consequence of outside influences and inward migration, the clan is recognised as fundamental to social identity.

Traditionally, Pawaia people are semi-sedentary living in small settlements where men and women occupy separate sections of the same dwelling (Toft 1983: 455). Although living quarters are divided based on gender, semi-sedentary settlement was not suited to constructing elaborate men’s houses like those built nearer to the coast. Today, family groups still spend long periods in temporary camps for subsistence purposes however; villages are larger and more permanent than they were during pre-European contact times. Following the proposal for a hydroelectric project in the 1970s, Pawaia people came together at Wabo to form what was then probably the largest Pawaia settlement ever (Toft 1983: 469).

Pawaia people have had limited interactions with Purari communities to the south although prior to the 1940s they did obtain *hiri* shell valuables from coastal villagers which they exchanged for bird of paradise feathers (Egloff and Kaiku 1978: 43, 1983: 486). Bamboo containers were traditionally used for cooking and food storage and there is no record that Pawaia people had access to clay pots (Toft 1983:457-58). The combination of small-sized settlements, frequent relocations, a limited inventory of material cultural items, and environmental conditions that are not conducive to the preservation of archaeological materials, has created a situation whereby Pawaia cultural activities, have left rare and faint archaeological signatures.

2. Purari River Delta

Inhabitants of the Purari River Delta to the south of Pawaia country share "a common bundle of cultural practices whose current configuration is the result of the interplay between local and foreign agents (missionaries, labour recruiters, anthropologists and government officials) over the last century" (Bell 2003: 12). The Purari River Delta people belong to six self-identified groups (Baroi, Iare, Kaimari, Koriki, Maipua and Vaimaru) (Bell 2008: 126).

A valuable record of traditional life in the Purari River Delta has been provided by F.E. Williams who, as Assistant Government Anthropologist, spent eight months in the Purari River Delta in the 1920s. Williams was given the task of documenting cultural heritage values that would "assist us in our task of fitting or, dovetailing existing customs into the civilisation which we are introducing" (JHP Murray, in Williams 1924: v). At that time, Purari River Delta villages were much larger than today and were sometimes home to more than 2,000 inhabitants. These large villages were structured around men's houses called *ravi*. According to Murray, the "institution of the Ravi" provided the "social cohesion" needed to maintain large populations (JHP Murray, in Williams 1924: iv) (Plate 1). Each *ravi* was the locus of social and cultural life for a section of the village community. Today, although *ravi* are no longer constructed, "they remain, alongside the clans, one of the primary units of identity within each tribe" (Bell 2003: 112).

Williams (1924) describes large villages as home to "village groups", each formed around one *ravi*. Each *ravi* maintained a high degree of autonomy, although slowly over time, groups would become differentiated along kinship lines and form new *ravi* communities (Williams 1924: 4). Each *ravi* contained five or six alcoves down each side called *larava,* each of these were the domain of an exogamous Patriarchal Group with its own *larava* name (Williams 1924: 69-71).

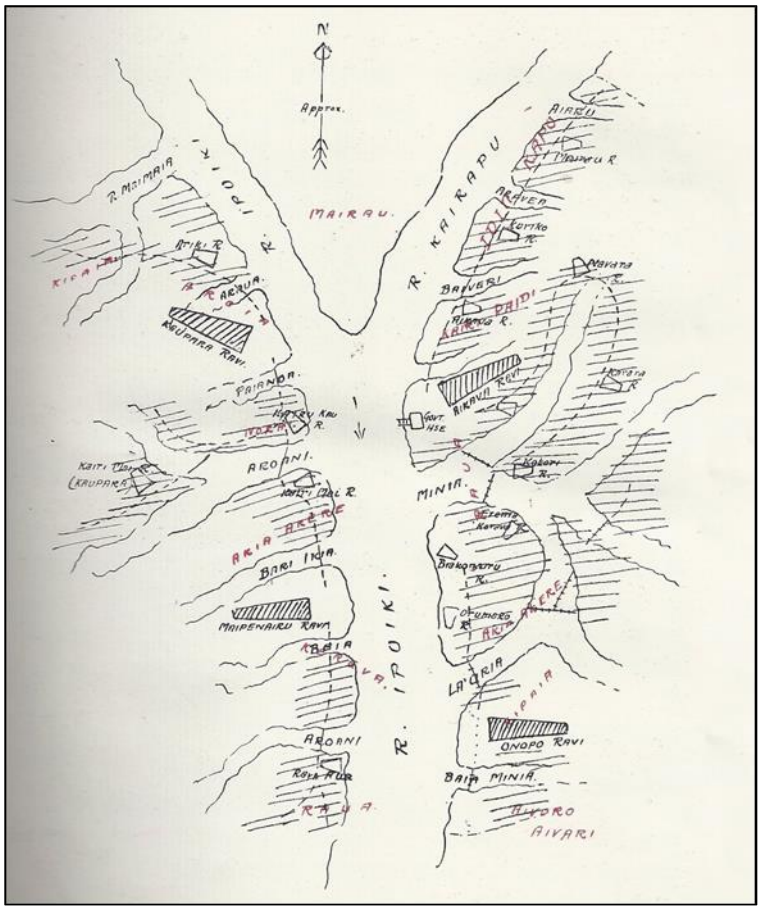
Plate 1 – '*Ravi*' Entrance

Photograph by Williams (1924: facing page 74)

In his reports, Williams (1924: 5) describes changing demographic and social situations and identifies people to groups, tribes and sections. Williams' somewhat confusing nomenclature is difficult to follow and this report uses his term section. In the 1920s Ukiravi was a large village

secluded away from major waterways (see Maher 1984: 219). Ukiravi was also known as Koriki and was home to the Koriki section. Ukiravi was also ancestral to Kairu and Oru villages. Williams differentiates the Koropenairu, group who also originated from Ukiravi and therefore by Williams' definition also belong to the Koriki section. The Koropenairu established villages called Akoma, Ikinu, Kimiri and Kakari. A second section originated from Iare village and gave rise to Okakinairu, Ravi Kivau (Iare 2) and possibly a third village also called Ravi Kivau (Figure 1). A third section originating from Kaimari village had offshoot villages called Vaimuru and Maipua. The fourth section is Baroi, which is the ancestral village of Oravi, Akiravi, Korovake and Evara villages. Williams (1924) was witness to a time of profound change involving *ravi* groups leaving former larger villages to establish new villages along the Purari River and major tributaries. The breakup of large villages into smaller settlements was set in train in the latter part of the nineteenth century by colonial administrators who brought an end to ritual cannibalism, which had formerly necessitated the formation of large villages to provide security (Allen 1951:27, Williams 1924: 3).

Figure 1 – Sketch Plan of Iare Village



(Williams 1924: facing page 10)

According to Williams (1924: 80), people regularly moved to new locations in search of better land as well as for purposes of concealment and defence. Although usually not located on the banks of larger Purari tributaries, access to the myriad waterways used for transport and communication in the Purari River Delta was essential. Williams (1924: 81) mentions that villagers would travel considerable distances away from waterways to obtain canoe trees but they did not show any inclination toward establishing settlements in such locations.

3. Orokolo Bay

After being promoted to the position of Government Anthropologist for Papua, F.E. Williams maintained his interest in the Purari region and returned to the Gulf between 1923 and 1937 to document cultural practices in Orokolo Bay. At that time, coastal settlements in Orokolo Bay comprised village groups forming "contiguous villages, called *karigara*" (Williams 1940). The *karigara* is a fundamental unit of community organisation pertaining to land ownership and ceremonial matters. The *karigara* is made up of one or more *bira'ipi*, which Williams (1940: 37-38) describes as patrilineal descent groups (*bira* = male, husband, man) determined by residential location (*ipi* = base or origin). Quite separate from a person's *bira'ipi*, a person also belongs to an *aualari* with *aualari* membership determined by that person's patrilineal descent only. *Aualari* are spread among all coastal groups in Orokolo Bay, and *aualari* membership remains immutable for life, whereas a person's *bira'ipi* based on descent and residence could change through marriage or residential relocation.

Each *karigara* in Orokolo Bay had its own *eravo* (men's house, coastal equivalent of the Purari River Delta *ravi*); *karigara* are thus described as "*eravo*-communities" (Williams 1940: 31). Like its *ravi* equivalent, an *eravo* was an impressive structure typically measuring around 30 m long by 15-20 m high that, by its presence, affirmed *karigara* residence and ownership (Williams 1940: 5, 35-38) (Plate 2). Today in Orokolo Bay, the past positioning of *eravo* structures is remembered in oral traditions. The places where *eravo* once stood connect Orokolo people to their ancestral pasts and legitimise their rights of access to land. Places where *eravo* once stood are highly significant cultural heritage sites that, as the centre of village life, will likely also have important archaeological manifestations.

The Orokolo *eravo* and Purari *ravi,* with their similar structuring roles serving as the locus of community activity and organisation, illustrate historical connections between the two areas. The origins of the word *eravo* can be traced to the Koriki word *lavi,* which suggests that the institution of the men's house was introduced to Orokolo Bay from the Purari River Delta, rather than the other way around (Brown 1973). Purari-Orokolo cultural connections are also apparent linguistically, as all Purari and Orokolo languages are structurally comparable to each other (Ray 1895). These cultural affinities resonate with ancestral stories recorded by Holmes (1903) in Orokolo Bay. The ancestral stories trace origins to the headwaters of the Purari River although the precise location of these ancestral places had by that time been forgotten. Holmes (1903) also found that ancestral migrations tracked to the east and southeast along the Papuan coastline, which is consistent with linguistic modelling (see Brown 1986: xv, xvii).

Plate 2 – "*Hevehe* Dancing before Eravo with Girls", Avavu Village

Photograph by F.E. Williams, February 1932 (Courtesy of National Archives Australia A6510, 380)

4. Burial Practices

In the Purari River Delta, traditional Koriki mortuary practices involved placing the dead on a platform or in a tree. After several months the skull of the deceased would be brought back to the village *ravi* where the skulls of the recently deceased were collected together (Williams 1924: 222). Whether other bones were also taken back to the village, or subject to secondary burial, or storage is not clear. At a later time, ritual feasting would signal the commencement of the *kairi* reburial ceremony (Plate 3). When feasting was finished, the skulls of the dead were gathered together and taken to a "burial ground (?)" where they were lined up and buried in a single hole (Williams 1924: 222). Williams' use of a question mark when referring to the "burialground" suggests that he did not know the location where the skulls were taken or much of the ceremonial protocols of internment. It can be deduced from Williams' descriptions that burial places were at some distance from the village. However, we do not know whether the burial grounds that Williams refers to are places where there are many burials or whether the *kairi* reburial ceremony involved burying skulls in different locations at different times. Based on the traditional burial practices observed amongst Keuru speakers, it seems more likely that the skulls were interred in different locations as determined by ancestral connections to land (see Skelly 2014).

Missionaries and government regulators discouraged secondary burial practices and encouraged villagers to bury their dead below the ground. Villagers pointed out that the swampy localities where they lived were unsuited to European burial practices and it appears that adhering to government directions they may have buried their dead in places that were remote from their villages. In the 1920s Williams (1924: 227) witnessed a canoe with the body of the deceased on board, being paddling out of view as the body was transported to a location to be buried below the ground in a European manner. What can be gleaned from ethnographic accounts is that villages in the Purari River Delta were probably not the site of primary burials.

Nearer to the coast the situation was different. Prior to the arrival of missionaries, the dead were placed just under the ground surface with the head left exposed and covered with matting. Once the body had decomposed, the skull was brought back to the house of the widow or son of the deceased. At some later point the skull was reburied. It was also a common practice to bury the dead in the sandy ground inside the village without recourse to secondary burial. Secondary burial practices were ended by missionaries and burying remains inside villages was banned under government regulations. Villagers had no option but to bury their dead in designated burial grounds demarcated like European cemeteries. In Orokolo Bay, the location of Christian-period burial grounds were determined by missionaries. For practical reasons, burial grounds were located short distances to the north of coastal villages thus avoiding waterways and coastal swamplands (Williams 1940: 114-115).

Plate 3 – Row of Skulls to be Re-buried in the 'Kairi' Ceremony

Photograph by F.E. Williams (1924: facing page 218)

5. Missionary Activity

Reverend James Chalmers was the first missionary to visit the Orokolo area. Investigating potential mission sites for the London Missionary Society (LMS), Chalmers travelled aboard a Motu *lagatoi* and landed at Maclatchie Point near the eastern edge of Orokolo Bay on 9 October 1883 (Chalmers 1895: 74-92). Chalmers describes meeting many potential converts on the beach, but it was not until 1907 that the LMS established a presence in Orokolo Bay and the Purari River Delta (Oram1992: 91). Missionaries took much longer to visit the sparsely settled areas of the upper Purari River. The LMS first visited the Pawaia in the 1950s and established a post near Uraru in 1961. The LMS were followed by Seventh Day Adventists who established a mission school at Koni in 1963 (Toft 1983: 468; Warrillow 1983: 443).

Missionary activities profoundly disrupted the social, cultural and ceremonial lives of the people that they encountered. The disruption brought by missionary activities was dramatically manifested in a cultural and physical malaise called the “Vailala Madness”. There is little doubt that the Vailala Madness was a direct consequence of missionary activities (Williams 1940: 29). The Vailala Madness emerged in Orokolo Bay in 1919 and as anthropologist F.E. Williams (1976: 332) observed, “where it has touched it has made a clean sweep of the ceremonies, and has destroyed almost every treasure of religion and art”.

The Vailala Madness affected all coastal villages to some degree and Purari River Delta villages as far north as Maipua. Those people that were afflicted made involuntary physical movements and suffered a loss of mental composure. The symptoms were similar to those that Williams had observed amongst shell-shocked soldiers returning from WWI. In Orokolo Bay, those that were afflicted were called *Haro heraripi*, which means “head-he-go-round” (Williams 1976: 332). The doctrines of the Vailala Madness contained traditional and biblical themes that emerged in a cultural cauldron fuelled by psychological stresses and accelerated by mass hysteria. The Vailala Madness spread very quickly from village to village, with people believing that their dead relatives were imminently about to return in a large steam ship loaded with tobacco, knives, axes and other goods. Villagers became disillusioned when the *sisima* (steamer) failed to arrive and the fervour of the cultural destruction waned during the 1920s (see Williams 1976: 334-335).

Soon after their arrival, LMS missionaries erected flag poles in villages, which were used to hoist a flag that would signal the day of the Sabbath. These flagpoles became one of the principal cult-objects of the Vailala Madness (Plate 4). Today the flag poles are likened to ‘telephone poles’ that could be used to communicate with the souls of the dead. In the past, men would stand around the pole singing vigorously, spiritual communications would pass from the pole into the ground and from there to an orator who could interpret the messages and become a voice for the dead (see Williams 1976: 49).

Plate 4 – Left: The Site of a Flag Pole Used for Communicating with the Spirits of the Dead during the Vailala Madness; Harevavo Village Right: Remains of the Flag Pole

(Photographs by R Skelly 2015)

Adherents to the doctrines of the Vailala Madness advocated the destruction of all traditional cultural values. Williams (1976) interprets the movement as an attempt to assimilate new sets of ideas at a time when traditional ceremonies were abandoned leading to a general feeling of cultural inferiority. The events of the Vailala Madness resonate in contemporary oral traditions that accommodate both traditional and Christian themes. The juxtaposition of traditional and Christian themes alerts to the complexity of interpreting oral traditions in areas where missionaries were most active.

In his essays, Williams (1940, 1976) repeatedly returns to the destruction brought by the Vailala Madness. He wrote that, “it is impossible to avoid the conclusion that the Vailala Madness, which dealt such a shattering blow to the ceremonies, was mainly due to Mission teaching” (Williams1940: 435). And later he wrote, “There is no doubt that the Vailala Madness has been the principal direct agent in the destruction of the Gulf culture” (Williams 1976: 460). In his writings, Williams displays deep frustration with the cultural destruction that missionary activities brought to the Purari River Delta and Orokolo Bay. Williams died in a plane crash in the Owen Stanley Ranges in 1943 and did not live to witness a second wave of cultural destruction, which was arguably traceable to the same origin. This time the destruction was brought by Tom Kabu and the ‘New Men’.

6. Tom Kabu and the New Men

Koivi Aua was born in Mapaio village around 1920. As a boy he witnessed a period of sustained cultural change as many aspects of traditional life were abandoned. Koivi attended the Mapaio mission school obtaining an education quite different to that of his father who learned about life in the village *ravi.* Koivi was keen to find out more about the outside world and he left the Purari River Delta at a young age. His adventures took him to Port Moresby where he joined the Native Constabulary. He was stationed in Samarai when the Japanese invaded New Guinea, and in 1942 he evacuated to Port Moresby on a small ketch with two Australian Army Officers. When they got to Port Moresby, the city was being bombed and in the confusion of the attack, they sailed on to Cooktown and from there to Cairns (Oram 1992: 92). The Australians nicknamed him Tommy, and from that time on he took the name Tom Kabu. Tom Kabu was employed as a naval orderly by the Royal Australian Navy and spent time in Brisbane, Sydney and Adelaide.

When men like Tom Kabu who had served in the Papuan Infantry Battalion, or worked for the Americans or Australians during WWII returned to Purari in 1945 and 1946, they brought with them deep dissatisfaction about the economic plight faced by their people (Maher 1958). They were unhappy with the inequality of colonial rule and were aggrieved that the Colonial Government failed to deliver on promises of financial aid and infrastructure development that had been made by Australian military officers during WWII (Oram 1992). The disaffected young men aspired to a better future and in Tom Kabu they found a charismatic leader for a progressive economic and cultural movement. They called themselves the 'New Men' and wore beards as a gesture of mourning for the passing of the traditional ways of life that they viewed as a hindrance to economic and cultural progress (Maher 1984: 217). They also adopted European forms of dress and spoke pidgin Hiri Motu; a language that was to them the language of commerce (Dutton 1985: 92, Maher 1958, 1984).

For the New Men, achieving their economic and cultural aspirations depended upon the abandonment of traditional cultural practices. They advocated the destruction of material culture and the adoption of European ideas. Many villagers enthusiastically embraced the aspirations of the New Men and burned ancestral heirlooms as an expression of their support. In addition, village *ravi* were burned and replaced with housing designed along European lines. Anything that appeared European was deemed to be progressive; the New Men discouraged the use of traditional woven sago mat walls in buildings in favour of sago midrib wall construction, which gave buildings a more European look. The New Men also caused demographic changes by encouraging people to abandon traditional villages in favour of locations that were more suited to growing commercial crops (Maher 1958: 90). The influence of Tom Kabu reached its peak in 1954 and 1955 when the New Men tried to achieve sovereignty for Purari. They suspended colonial law, sought to establish their own judicial structures, and raised their own flag. However, their ambitions were short lived and quickly thwarted by patrols sent to the area by Australian administrators (Maher 1958:78).

The New Men belonged to what became known as the "Kabu Movement". The Movement formed a cooperative called the *Kompani* and sold shares to villagers to finance enterprises that would underpin the reorganisation of the Gulf economy. Villagers were encouraged to grow sago and copra which the *Kompani* planned to ship in commercial quantities to Port Moresby to be sold for cash rather than exchanged for pots as had been done during *hiri* exchanges prior to WWII. The profits from the exports were to be used to fund the establishment of trade stores in all Purari

villages. In 1954 almost all households used *hiri* trade clay pots; however, Tom Kabu convinced villagers to smash their clay pots with the promise that they would be replaced with superior European-made cooking wares when the trade stores opened.

Using £3,000 contributed by Purari villagers, the *Kompani* purchased a schooner called the *Ena* from the Royal Australian Navy in April 1946. Just one month after taking possession of the schooner (which was in very poor condition), one of the men living on the ship in Port Moresby mistook gasoline for kerosene and started a fire that burnt the ship beyond repair. Nobody was seriously hurt, and the Australian Navy refunded the £3,000 purchase price, but the aspirations of the movement were seriously damaged. Maher (1958: 82) argues that the economic objectives of the *Kompani* were "well considered", but the New Men lacked the cross-cultural business skills needed to make their enterprise a lasting success. In addition, their initiatives received no administrative support and officers from the colonial government were openly hostile toward Tom Kabu (Maher 1984: 218). The attitude of government officers is paradoxical in that Tom Kabu's vision of self-determination and economic progress was in line with that of the Government. Tom Kabu was not fluent in English but provided an insight in to his thinking and aspirations when he said:

> *"A man cannot live without money … The money do work itself for man. The money saves the life of man. The coloured races in this world work, for their only aim is HIGH STANDARD LIVING" (Kabu 1956, cited in Maher 1984: 220).*

Today, Tom Kabu is a topic of conversation in any discussion about cultural heritage values in the Purari River Delta. The Kabu Movement is often cast in a very negative light and many villagers express deep regret about the cultural heritage values that were lost because of the actions of Tom Kabu. Although cultural heritage values in the Purari River Delta were seriously degraded by the Kabu Movement, Maher (1984) argues that the damage was not a direct result of the Movement, but an inevitable consequence of earlier damage caused by the activities of colonial administrators and missionaries. In Maher's assessment, many traditional practices (e.g. male initiation) were not active by the mid-twentieth century and traditional powers imbued in material objects had already been eroded. Thus, in Maher's (1984) view, the New Men were not simply destroying what was old but rather replacing what had already been damaged.

Tom Kabu was an idealistic patriot and a politically skilled entrepreneur. He is described by those who knew him as a self-controlled, determined and charismatic negotiator (Maher 1984, Oram 1992). Tom Kabu had witnessed Purari people being exploited by colonial powers and, "by force of personality he became the political and economic leader for the whole of Purari society" (Oram 1992: 92). Today, opinions about Tom Kabu are deeply divided amongst Purari villagers; he is revered in Poroi for introducing the Baha'i Faith, whereas the destruction that he encouraged is remembered with profound sadness by villagers at Akoma. Tom Kabu died in 1969 aged 48.

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Appendix 4
Formally Documented Cultural Heritage Sites

Table of Contents

Appendix 4 Formally Documented Cultural Heritage Sites **1–1**

Introduction **1**

1. Ancestral Village Sites **2**

1.1 Haralua 2

1.2 Vaii Vavere 3

1.3 Heve Cultural Area 3

2. Spirit/Ritual Sites **9**

2.1 Wabo Kai Seiro 9

2.2 Sasmeia 10

2.3 Subuia 11

2.4 Lavi 12

2.5 Mae 13

2.6 Vaii Veruku 14

2.7 Vaukaea 15

2.8 Akia Ini Laua 16

2.9 PRL-15 Oxbow Wetlands 17

3. Archaeological Sites **19**

3.1 JP11 Pottery Sherd Scatter 19

4. References **21**

Introduction

This appendix describes the 12 formally recorded sites and one documented site (PRL-15 oxbow wetlands) from the 2016 upstream cultural heritage baseline survey, as described in the Upstream Cultural Heritage Baseline Report (ERIAS 2017).

There were a number of other sites that were named during consultations and which are described in the main report. However, because they were not formally recorded and because the site characteristics are in need of additional confirmation, they have not been included in this appendix of formally documented sites. They include:

- Ape Ohoro spirit site
- Moiwailedsa women's site
- Popo ancestral village[1]
- Maiebe-Warubeneai spirit site.

[1] Popo ancestral village has been previously identified and documented but was not visited by the field team to this study in 2016 and therefore was not formally recorded.

1. Ancestral Village Sites

1.1 Haralua

Type: Ancestral village

Associated village: Ara'ava

Project area: Riverways

According to informants Haralua is an ancestral village that was occupied immediately before people settled at present-day Ara'ava village. Some informants asserted that all Ara'ava clans claim ancestry to Haralua however, there were differing opinions amongst informants from different clans and a more accurate characterisation would be that the majority of Ara'ava clans have connections to the site.

Haralua is across the river from Ara'ava village and today the area is poorly drained swampland. Ground surface visibility is high (75-100%) however, no archaeological materials were apparent with the exception of a stone with reported magical properties that sits at the centre of the site (Plate 1). The stone is not natural to the alluvial landscape and was reportedly brought to Haralua from further inland during ancestral times. Examples of similarly sized stones being brought to villages and used to mark the entrance to the village men's house are well known in the Gulf of Papua (see Skelly 2014). In the past, Ara'ava villagers made offerings to the Haralua stone so as to bring about positive outcomes for their village although such ritual engagements are no longer practiced today. There are two coconut trees close to the Haralua stone and an old mango tree some 160 m east of the stone. The mango tree marks the southeast cultural boundary of the site. Haralua is today setback from the river bank however, the river is said to have meandered tens of metres to the west and Haralua was on the edge of the river when the village was occupied.

Plate 1 – Left : Haralua Ancestral Village Site. Right: The Haralua Stone marking the Centre of the Ancestral Village

Haralua was reportedly home to 10 Koriki-speaking clans who dispersed to different locations following a series of social upheavals. People left Haralua five generations before the present-day adult generation suggesting that the village was occupied up to the latter part of the nineteenth century. This period coincides with the time when colonial administrators quelled inter-village rivalries allowing clans to disperse from larger villages where they formerly clustered due to

security concerns. Considering that changing riverine environments would have necessitated regular adjustments to village layout up and down the river bank, and that the 10 clans living there clustered around more than one men's house, Haralua was likely a large settlement. Archaeological materials may be expected for hundreds of metres upstream and downstream from the Haralua stone that, according to oral tradition, marks the village centre.

1.2 Vaii Vavere

Type: Ancestral village

Associated village: Aivai

Project area: Riverways

Vaii Vavere is an ancestral village site for the Iare-speaking, Vaii Ona Nairu clan, resident at Aivai village. The site stretches along approximately 300 m of riverbank. Although ground visibility is high (75-100%) on the bank,no archaeological materials were apparent. The team did not survey all parts of the site although informants who regularly visit the area confirmed that there are no archaeological materials such as pottery sherds or shells visible on the ground surface in any part of the site. Much of the site is poorly drained and has been planted with sago palms. A small drainage channel marks the northern boundary of the site (Plate 2). Three old coconut trees some 90 m back from the river's edge suggest that the site extends to the west although the river course is continually meandering and the old coconut trees may have been closer to the river edge when the site was occupied. Stratified archaeological deposits are likely to be present at the site. Vaii Vavere has ancestral spiritual significance for Aivai villagers, and Vaii Ona Nairu clan elders ask permission from their ancestors before harvesting sago at the site. Members of other clans are not permitted access to the area. According to an informant who was born in 1962, Vaii Vavere was abandoned four or five generations before his birth suggesting that the site was occupied until the latter part of the nineteenth century.

Plate 2 – Vaii Vavere Showing the Drainage Channel on the Northern Boundary of the Site

1.3 Heve Cultural Area

Type: Spirit and ancestral village site complex

Associated villages: Huruta, Paevera, Ere, Kilavi, Avavu, Hepere, Maea, Harevavo, Kaivukavu, Iuku, Larihairu, Mareke, Kavava, Herakela, Lariau

Project area: Export Pipeline Corridor

The cultural heritage team was guided to Heve Hill (also known as Heve) by informants from Ere, Kilavi and Paevera villages. The aim of the survey was to investigate the physical and archaeological manifestations of the site and to map a boundary around the Heve cultural heritage area. As we approached Heve, informants prepared a ritual offering to be made to the ancestral spirits that reside at Heve. The team was then granted permission to enter the area (Plate 3).

Oral traditions belonging to seven Orokolo villages recall a time when Heve Hill was on the beach. Oral traditions told at Kavava are particularly evocative describing how their ancestors were in awe of the waves they saw crashing at the site. Descriptions of Heve as the site of a beach-fronting village are consistent with what is known about coastal progradation in the Gulf of Papua (see 4.3.1). Just as people were drawn to Heve when it was in a beach-fronting location, oral traditions recall people leaving Heve as the coast expanded southward and Heve became distant from coastal resources and trading opportunities.

Plate 3 – Left: Making the Ritual Offering. Right: Preparing for the Ritual

Heve Hill is a low hill on an otherwise flat alluvial plain. From its base, Heve Hill measures approximately 100 m across; the top of the hill is 46 m above sea level and crowned by a rock out crop some 4 m high (Plate 4). Heve Hill is an extraordinary geographic feature in that it stands as an isolated rock outcrop on top of a low hill in an alluvial landscape otherwise devoid of rock or stone. The rock appears to be outcropping from the Miocene clastic marine sedimentary rock that underlies the Purari River Delta (Löffler 1977). Fossilized bivalve shells have weathered out from the outcrop and are found scattered near the base of the formation (Plate 5).

Plate 4 – Views of the Rock Outcrop at Heve Hill

Plate 5 – Left: Heve Hill Rock Face. Right: Fossilised Bivalve Shells at the Base of the Formation

Some 50 m to the northeast of the rock outcrop, Hihovu Creek flows near the base of Heve Hill (Plate 6). Pottery sherds can be seen eroding out of the bank of the creek and during the time that the archaeological deposit was visually inspected, informants gathered a number of sherds that they found lying in the bottom of the creek. The five sherds that they found were photographed and returned to the creek bed. The pottery sherds in the stratified deposit were photographed but these were not disturbed and their attributes were not recorded.

Plate 6 – Left: Hihovu Creek. Right: Pottery Sherd Eroding from the Creek Bank

The five sherds that were gathered from the creek bed provide an informative insight into the archaeological history of the immediate area. The attributes of the five sherds are:

1. Rim sherd from a carinated (shouldered) dish with a row of individually-impressed punctations on a carination at the base of the rim course. The vessel also has linear-incised decorations between the carination and a rounded lip (Plate 7a).
2. Part of a rim sherd from an inverted carinated bowl. The sherd has tightly clustered rows of individually-impressed punctations above the carination (Plate 7b).
3. Rim sherd from a rounded bowl with an externally swelling lip profile (Plate 7c). The sherd has body decoration in the form of eight incised lines that are parallel to each other. The parallel lines are bordered by a row of individually-impressed punctations. The decoration on this sherd is comparable to decorations on sherds found at the Urourina site on Yule Island 180 km to the southeast and dated there to 720±105 BP (Vanderwal 1973). Sherds with similar decorations have also been found in archaeological contexts at Lui Swamp 25 km to the southeast and securely dated there to within the period 537-678 cal BP (Skelly 2014).
4. Rim sherd from an inverted carinated bowl with an externally swelling lip profile (Plate 8a). Decoration above the carination consists of vertical rows of impressions that were made using the distal margin (lip) of a bivalve shell. The stacked rows of shell lip impressions are separated by vertical grooves. This form of decoration is closely comparable to 'late' Motupore decoration found on Motupore Island in Bootless Bay east of Port Moresby and dating to around 700 years ago. Comparable decorative conventions have been found at the Keveoki site in the Vailala River region and dated there to within 317-651 cal BP (Skelly 2014).
5. Rim sherd from an inverted carinated dish (Plate 8b). The rim has shallow notched decoration on the outside edge of the lip and irregular linear incisions between the base of the rim course and the vessel lip.

Although the attributes of the five sherds are described based only on field notes and field photographs taken in poor light (rather than analysis under laboratory conditions), it can be said that decorative conventions are comparable to those found in assemblages from the Vailala River region, Yule Island-Hall Sound and Bootless Bay east of Port Moresby. The assemblage thus demonstrates that people living at Heve were culturally connected to coastal villages along at least 300 km of Papuan coastline to the east as far as Port Moresby some 400-700 years ago.

The abundance of sherds seen at Hihovu Creek suggests cultural activity on a scale consistent with a village-scale settlement being located in the area. However, the attributes of the small

ceramic assemblage are not what would be usually expected from a village occupation deposit. All ceramic assemblages excavated from settlement locations on the south coast of Papua New Guinea contain a high proportion of domestic cooking vessels. These vessels are cooking pots that most often have restricted collared necks (to retain food as it cooks) and everted rims. The morphological attributes of cooking pots are more easily identified than bowls or dishes in equally fragmented assemblages however; no sherds from cooking pots were found in Hihovu Creek. The Hihovu Creek assemblage contains carinated dishes and bowls with display decorations that may not correlate with day-to-day domestic activities. Either the creek cuts through a section of a village site where day-to-day domestic activities did not take place or the assemblage represents the material signature of ritual or spiritual engagements at Heve Hill (archaeological excavations would be needed to determine whether Heve is a domestic village site, ritual site or both).

Plate 7 – Decorated Pottery Sherds from Hihovu Creek

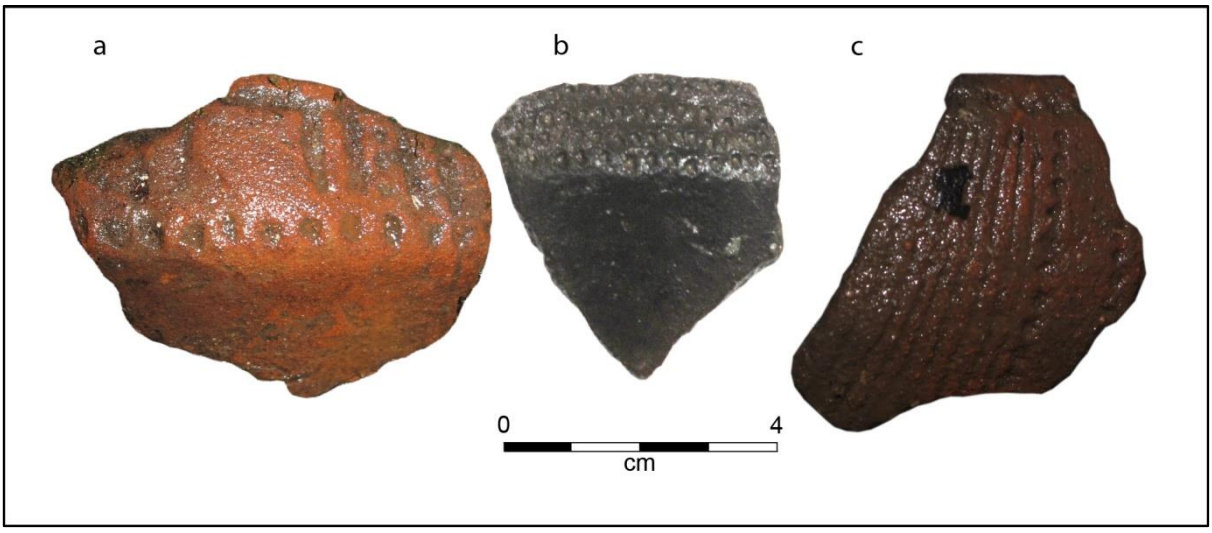
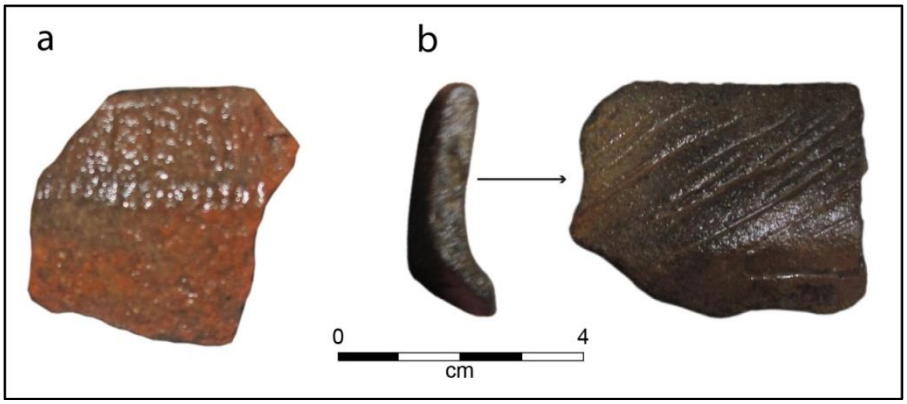


Plate 8 – Decorated Pottery Sherds from Hihovu Creek



The Heve Hill cultural area also features a bubbling cold water spring approximately 130 m north of the rock at the centre of the site complex (Plate 9). The spring is known locally as a ‘well’ and is attributed spiritual powers. There is also a stand of nipa palms (*Nypa fruticans*) approximately 475 m southeast of Heve Hill that is viewed as physically and spiritually connected to Heve Hill (Plate 9). The nipa stand is isolated from the vast nipa swamplands nearer to coast and its existence is considered to be an environmental anomaly that can only be explained in terms of the spiritual power of the Heve area. According to oral tradition, there is an interconnecting tunnel

occupied by spirits below the ground that links the nipa stand to Heve Hill and to the coast. As well as being a spiritual conduit, the tunnel is thought to carry the water that sustains the nipa stand.

Plate 9 – Left: Heve Well. Right: Heve Nipa Stand

The Gulf of Papua is a region where stones have special spiritual power, as Codrington (1891: 175) observed for Melanesia generally, “sacred places have almost always stones in them; it is impossible to treat separately sacred places and sacred stones”. Oral traditions from Iuku village recall ancestors retreating in terror when they first encountered the spiritual power of the stone and sea at Heve Hill. For other villages, oral traditions with spiritual and sacred themes are also used to explain the sites extraordinary physical presence. Informants describe the rock on Heve Hill as a ‘spirit house’ with a door on one side that opens to other dimensions. Villagers describe aeroplanes mysteriously arriving at Heve and disappearing into the site. They also describe unexplained sounds coming from Heve as the area shimmers and moves with the changing tide.

Heve was named as an ancestral village location during consultations at all 15 Orokolo-speaking villages. Key informants from 46 clans representing the 82 clans who live in Orokolo Bay identified Heve as an area of high cultural significance. As well as an ancestral site, Heve is specifically named as a spirit site in the oral traditions of nine villages. In coastal villages were missionaries have been most active, oral traditions describe Hihovu Creek as the place where Jesus was baptised (Harevavo village), and Heve Hill itself as the site of The Tower of Babel (Kavava village). Thus, as well as a highly significant archaeological site, Heve is an active spiritual locus for oral traditions with traditional ancestral and Christian spiritual themes.

2. Spirit/Ritual Sites

2.1 Wabo Kai Seiro

Type: Spirit/ritual site

Associated village: Ura

Project area: PRL-15

Wabo Kai Seiro is a spirit site recorded with Jaoho clan informants from Ura village. The site is in the form of a rock in the Purari River that can be seen at times of low water although when the site was recorded, the rock was submersed under a section of rapids (Plate 10). The rock has been known to be occupied by a spirit that takes the form of a white man although more recently the spirit has taken the form of a white woman. The spirit residing at Wabo Kai Seiro causes canoes to capsize and although the site is considered to be less spiritually potent than it was in the past, women and children are forbidden from paddling near Wabo Kai Seiro and avoid that part of the river.

Plate 10 – Wabo Kai Seiro Spirit Site, Ura Village

2.2 Sasmeia

Type: Spirit/ritual site

Associated village: Wabo

Project area: PRL-15

The Sasmeia spirit site is reportedly a tunnel that runs for approximately 90 m below Eé Creek near Wabo village (Plate 11). The site was recorded with representatives from five clans resident at Wabo village (Wa'jupe, Nemina, Onaoua, Pokea, Su'u).

The Sasmeia tunnel is occupied by an anthropomorphic spirit called Intou who can appear in the form of a man or a snake. If young children or babies meet eyes with Intou they will be captured by the spirit. For that reason, mothers with babies and children do not paddle their canoes near Sasmeia or cross the river in the vicinity of the site.

Plate 11 – Sasmeia Spirit Site, Eé Creek, Wabo Village

2.3 Subuia

Type: Spirit/ritual site

Associated village(s): Subu and Subu 2

Project area: PRL-15

Subuia is a spirit site near Subu and Subu 2 villages. Subuia is a rock on the edge of the Purari River measuring approximately 7 x 4 m (Plate 12).

The oral tradition recalling Subuia was recorded with key informants from Subu 2 village. The story begins during ancestral times when a man attempted to build a dam across the Purari River. The man's two sisters, named Subuia and Turei tried to distract him from building the dam by setting a fire in the village and telling him that it was his house that was on fire. The brother rushed back to the village and was furious when he found that his sisters had deceived him. In retaliation he beat them both and as a consequence the two sisters left the village. They travelled up the Subu River but Turei soon left Subuia behind because Subuia was slowed down by the two pigs she was taking with her. One of the pigs was called Laupara and it refused to walk. Subuia gave the pig food to encourage it to continue but the pig wouldn't move so she left it behind. Laupara turned to stone and can be seen today in the form of a large rock on the edge of the Purari River. Although details vary, the story of Laupara is also recalled in oral traditions at Ura village where it is said that if you hit Laupara with your paddle while passing, the rock squeals like a pig. Key informants at Subu 2 said that the Subuia spirit site was important to them because it validates oral traditions detailing their ancestral migration story.

Plate 12 – Subuia Spirit Site, near Subu and Subu 2 Villages

2.4 Lavi

Type: Spirit/ritual site

Associated village: Ara'ava

Project area: Riverways

Lavi is a spirit site evident as an area of poorly-drained ground inside Ara'ava village. Lavi is 70 m from the edge of the river and measures approximately 16 x 7 m (Plate 13). The site was recorded under the guidance of key informants from the Kairu Kari, Aivai Koivi and Aelavi clans. However, elderly key informants chose not to walk to the site. No archaeological materials were observed when the site was recorded although according to informants, an important stone axe and clay pots are buried at the site.

Lavi is not used for gardening or any other purposes. Rituals to appease malevolent spirits were performed at Lavi in the 1980s but rituals are no longer performed at the site. Lavi remains a sensitive spirit site that is avoided by villagers although today it is permissible to walk across the site. Enquires about the site drew only general responses as Lavi's spiritual properties are confidential to individual clans and could not be discussed in a community forum. The cautious tone of conversations suggested that Lavi remains an active spirit site.

Plate 13 – Lavi Spirit/Ritual Site, Ara'ava Village

2.5 Mae

Type: Spirit/ritual site

Associated village: Ara'ava

Project area: Riverways

Mae is a spirit tree in Ara'ava village (Plate 14). The tree is approximately 4 m in diameter and is located close to the river bank. No trees of the same species or size are apparent elsewhere on either side of the river. According to informants, the tree is the same size today that it was when Ara'ava village was settled more than 100 years ago. The physical size of the tree suggests that it has been there for a long time. The tree is home to a female spirit called Lavi who is the spiritual mother of Ara'ava village. Oral traditions also recall the tree as the site of human burials. This does not necessarily mean that human remains are buried in the area. Tree or platform burials were a favoured burial practice of Koriki-speaking villages prior to the arrival of colonial administrators who discouraged the practice (Williams 1924: 217). Mae is across the river from the Koriki ancestral village of Haralua, and oral traditions recalling burials may be referring to the site being used for tree or platform burials. The nearby river appears to be cutting in to its west bank and as a consequence, the Mae spirit tree could be threatened at some time in the future.

Plate 14 – Mae Spirit Tree, Ara'ava Village

2.6 Vaii Veruku

Type: Spirit/ritual site

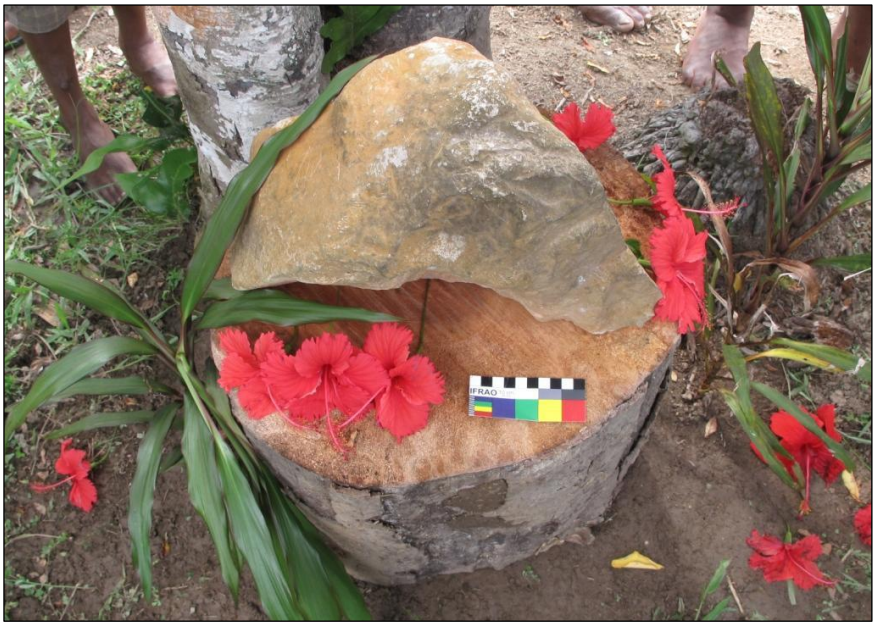
Associated village: Ara'ava

Project area: Riverways

Vaii Veruku is a revered spirit stone that was brought to Ara'ava from an ancestral village (Plate 15). Members of the Erava clan are the custodians of the stone. The stone is recalled as having been much larger in the past than it is today. It was previously located on the river bank but has recently been relocated to a garden some 70 m from the edge of the river.

The stone is occupied by a spirit called Vaii Veruku who is the spiritual father of Ara'ava village. Vaii Veruku is sometimes seen by villagers; he is less than two feet tall and carries a bow and arrow. In the past people believed that sickness came from the stone and villagers made offerings to Vaii Veruku and held feasts to cure their illnesses. Feasts were also held to please Vaii Veruku and bring good fortune to the village. Mistreating Vaii Veruku reportedly had dire consequences. Oral traditions recall a man fracturing away part of the stone to form it into a stone axe; as a consequence of his action he immediately went blind and died soon after. More recently, a boy who reportedly disrespected Vaii Veruku drowned nearby.

Plate 15 – Vaii Veruku Spirit/Ritual Site, Ara'ava Village



2.7 Vaukaea

Type: Spirit/ritual site

Associated village: Kairimai

Project area: Riverways

The Vaukaea spirit tree site was recorded at Kairimai village with representatives from the Ukia Lavi clan who are the principle custodians of the site (Plate 16). The tree is a medium for sorcery activities and is occupied by the Sokai family of spirit beings. People sometimes drown in the river, which is thought to be a consequence of malevolent sorcery involving Sokai spirits. When people are lost to the river, their spirits go to Vaukaea. Oral traditions recall Vaukaea as “always” being in the area although in the past the tree was located in swamp forest outside the village. However, the river course has changed and today the tree is inside Kairimai village.

The tree is approximately 6 m in diameter and enshrouded by thick vines. The tree is in very poor condition; there is no evidence of new growth and the tree may be already dead. A few years ago Vaukaea was deliberately set fire by a villager and badly damaged. No reason was given as to why the tree was damaged although the site’s association with sorcery activities suggests a potential motive.

Plate 16 – Vaukaea Spirit Tree Site, Kairimai Village

2.8 Akia Ini Laua

Type: Spirit site complex

Associated village: Aivai

Project area: Riverways

Akia Ini Laua was recorded with Vaii Ona Nairu clan informants from Aivai village. The site spans three separate locations near Aivai village (Plate 17). Oral traditions about the site recall a story involving sisters named Kekeri and Kaumura, and their younger brother called Pii Pii. The story begins with the two sisters catching fish and prawns in two small creeks called Akia and Ini Laua. When they returned to the village with their catch, their younger brother Pii Pii asked for some food but they refused to share their catch and told Pii Pii that he could eat worms. Pii Pii became upset about his sisters refusal to share food with him and a series of spiritual transformations were set in train. Firstly, when his older sister touched a sago plant she was transformed in to a type of mushroom called Vaii Mumu, then his younger sister touched a tree and transformed in to a type of fruit called Porea Kaumera. The younger brother himself, transformed in to swift-like bird called Iki Iki vai pero pero. The spirit site complex is comprised of the two small streams where the sisters caught fish and prawns and spirit tree called Eere. Eere is a spirit house that is home to the two sisters and their brother. According to informants, Aivai is a Christian village and for that reason the site is considered to lack spiritual powers. However, the site remains important as the story of Akia Ini Laua plays a role in educating young people about the importance of sharing in community life. The area is a valuable source of sago and bamboo and although considered in some ways to be devoid of spiritual powers, before entering Akia Ini Laua to harvest sago or collect bamboo, villagers ask for permission from the spirits that dwell in the Eere spirit tree.

Plate 17 – Akia Ini Laua Spirit Site Complex. Left: Akia Creek. Right: Eere Spirit Tree

2.9 PRL-15 Oxbow Wetlands

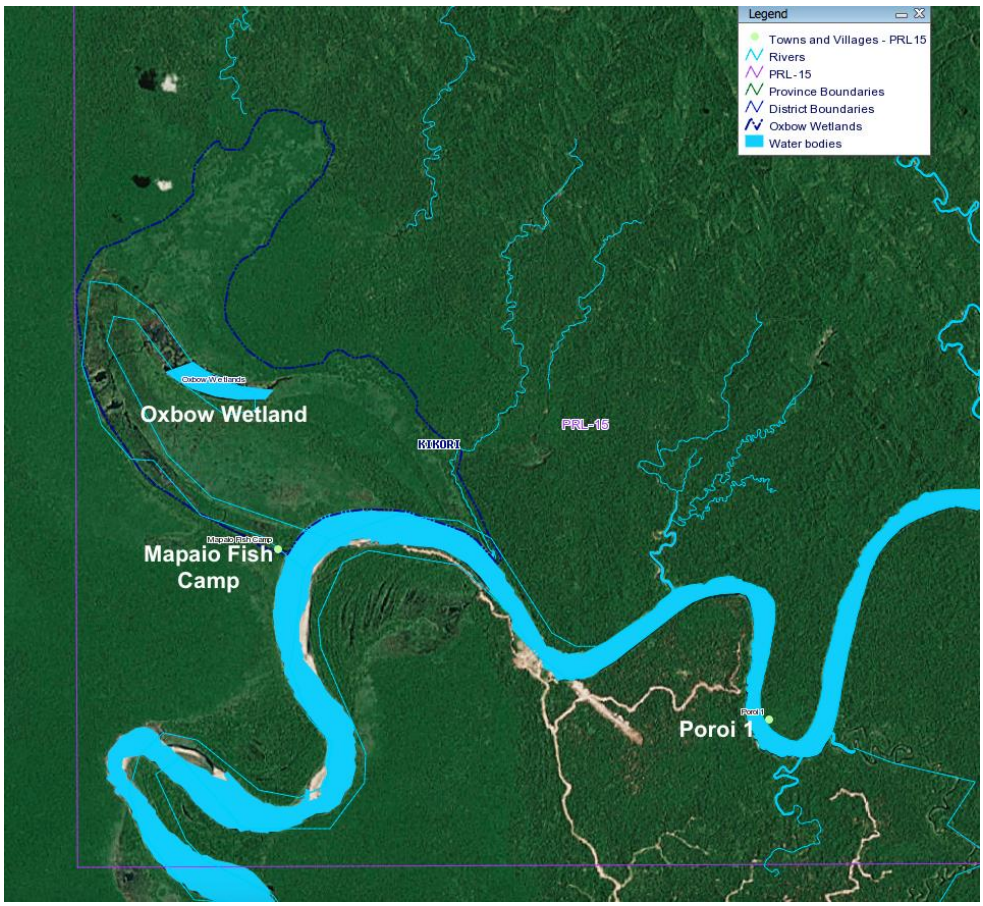
Type: Spirit/ritual site complex and traditional hunting area

Associated village: Poroi 2

Project area: PRL-15

The PRL-15 oxbow wetlands spirit site complex is located adjacent to the Purari River near Mapaio Fish Camp (Figure 1); the provisional name for this location reflects the apparent lack of a generic name for the complex of sites as a whole. The area features four swamps called Wietebe Pupu, Sono Pupu, Soari Pupu and Perijaner Pupu. A spirit-being called Pei lives at Wietebe Pupu which is at the spiritual core of the spirit site complex. The other three spiritual components of the site are Sono Pupu, Soari Pupu and Perijaner Pupu. The Nemina clan view the four named swamps as environmentally and spiritually connected and based on their interconnectivity, each of the four swamps is considered to be of equal spiritual and environmental importance.

Figure 1 – PRL-15 Oxbow Wetlands



The PRL-15 oxbow wetlands is the 'first hunting place' for the Nemina clan, a highly valued productive hunting ground well stocked with wild pigs, crocodiles, fish, turtles, cuscus and cassowary, as well as four species of snake that are highly rated delicacies. After listing the most important resources in the area, the key local informant emphasised the point that every plant and animal species found in the wetlands is useful to the Nemina clan in some way.

On most occasions only members of the Nemina clan hunt and fish in the wetlands however, Nemina clan elders do grant permission to other Poroi clans to access resources in the area. On such occasions a Nemina clan representative will travel with the hunting group so that they are welcomed by the spirits that live there. When a group of clansmen finish their hunt, another group of hunters may be allowed in to the area or there may be no hunting permitted for months at a time. The clan is keenly aware of the need to maintain wetland resources and manages resources by closely controlling access to the area.

As well as a hunting resource, the wetlands also support stands of wild sago. A hunting expedition may last for days or weeks although a stay lasting two to four months is not out of the question. During these long forays, wild sago is harvested, as groups do not carry sago in to the area. Men cut down the sago palms and chip the sago. Women come into the wetlands to process the sago pith in the traditional manner. Wild sago harvested to feed the hunting camp provides the additional benefit of attracting wild pigs to the area. To take advantage of the situation, hunting parties position themselves near sago processing areas late at night. As the sun rises, groups of five or six pigs attracted by the smell of the sago wander into the area; the hunters pounce with spears and often take more than one pig at a time. Cassowaries are also common in the wetlands being attracted by the diverse array of fruits that grow in the area. Cassowaries are not actively hunted and are more often captured in snares set by hunters.

The Nemina clan plant sago on clan lands along the banks of the Purari using wild sago seeds collected from the PRL-15 oxbow wetlands. Planted sago takes around 15 years to mature and stands are continually planted to maintain a constant supply of sago in to the future. Oral traditions recall a time before sago was planted and at that time wild sago from the wetlands provided people with a staple diet. These days however, wild sago is an alternative food source accessed only in times of food shortage. Not all clans living at Poroi 2 are as well organised as the Nemina clan and some clans experience times when planted sago is in short supply and on such occasions permission is granted for them to harvest wild sago in the PRL-15 oxbow wetlands.

3. Archaeological Sites

3.1 JP11 Pottery Sherd Scatter

Type: Archaeological site

Associated village: Ere, Kilavi and Paevera

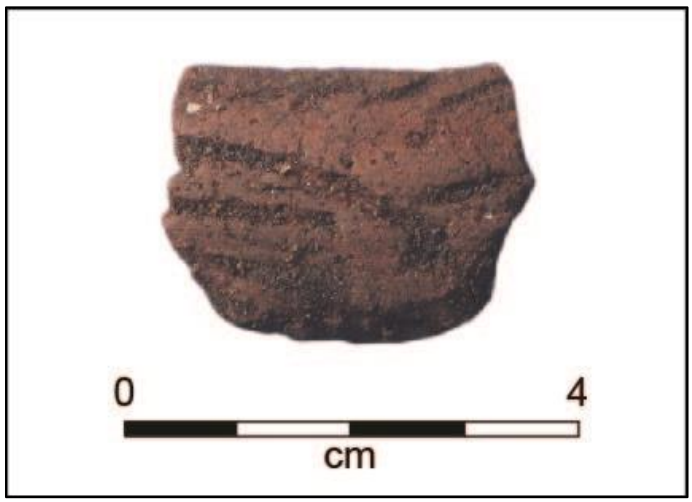
Project area: Export Pipeline Corridor

An archaeological site in the form of a scatter of pottery sherds was recorded in the company of informants from Ere, Kilavi and Paevera villages in an area cleared for gardens north of Heve Hill. The garden area does not have a local name and the site was given the field code JP11 (Plate 18). Ground visibility was high (75-100%) and numerous pottery sherds were apparent across the site suggesting that the garden may mark the location of a village-scale settlement. In one part of the garden, sherds were exposed by a hole dug to approximately 50 cm depth. Pottery sherds were numerous in the spoil heap from the hole confirming that stratified archaeological deposits are present at the site. Sediments are sandy in texture suggesting that the site is located on the old beach plains known to extend to the base of the hills to the north.

Plate 18 – JP11 Pottery Sherd Scatter; Area Cleared for Gardens

One rim sherd from an inverted bowl was found in the spoil heap by a local informant. The sherd has diagonal gash-incised decoration on the external edge of the lip and linear-incised body decoration (Plate 19). The body decoration suggests an age of at least 250-300 years. However, the lip and body decoration together suggest that the sherd is no older than 500 years. The sherd predates *hiri* trade pottery, which rarely has body decoration. According to the informants who guided surveys to JP11, the Project should avoid areas between the JP11 pottery sherd scatter and Heve Hill, which is 775 m to the south. They suggested that JP11 could be considered indicative of the northern border of the Heve Hill cultural area.

Plate 19 – JP11: Decorated Rim Sherd



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Appendix 5
Cultural Heritage Consultations

Table of Contents

Appendix 5 Cultural Heritage Consultations 1–1

1. Cultural Heritage Consultations 1

1.1 Pawaia-Speaking Villages 1

1.1.1 Ura Village 1

1.1.2 Wabo Village 3

1.1.3 Subu 2 Village 4

1.1.4 Poroi 2 Village 5

1.2 Koriki-Speaking Villages 6

1.2.1 Ara'ava Village 6

1.2.2 Kairimai Village 8

1.2.3 Kairu'u Village 9

1.2.4 Akoma Village 10

1.2.5 Ikinu Village 11

1.2.6 Kakari Village 11

1.3 Iare-Speaking Villages 11

1.3.1 Mapaio Village 11

1.3.2 Kaevaria Village 12

1.3.3 Aivai Village 15

1.3.4 Aumu Village 15

1.3.5 Maipenairu Village 17

1.4 Ahia -Speaking Villages 18

1.4.1 Evara Village 18

1.5 Kaimare-Speaking Villages 21

1.5.1 Upaia Village 21

1.6 Maipua-Speaking Villages 22

1.6.1 Apiope Village 22

1.6.2 Mariki Village 24

1.7 Orokolo-Speaking Villages 25

1.7.1 Huruta Village 25

1.7.2 Paevera Village 26

1.7.3 Ere and Kilavi Villages 26

1.7.4 Avavu Village 27

1.7.5 Hepere Village 28

1.7.6 Marea Village 28

1.7.7 Harevavo Village 29

1.7.8 Kaivukavu Village 30

1.7.9 Iuku Village 31

1.7.10 Larihairu Village 31

1.7.11 Mareke Village 32

1.7.12 Kavava Village 33

1.7.13 Herakela and Lariau Villages 33

2. References 34

1. Cultural Heritage Consultations

Cultural heritage consultations involved key informants belonging to 109 clans representing 245 clans resident at thirty-four villages inside the study area (see Figure 3.3 of main report). A number of informants were conversant in English language and provided English spellings for their clan names. However, on the majority of occasions, clan names were phonetically transcribed from non-written Papuan languages through Tok Pisin to English. Therefore, the English spellings of clan names documented in this report may differ to those recorded by others in previous or future studies. Variations can also be expected in the number of resident clans that are recorded for each village. Informants variously identify their affiliations to major clans or sub-clans of larger major clans. People's clan affiliations were recorded based on how they themselves articulated their affiliations (to clan or sub-clan). In addition, over time variations in clan numbers will occur as people move to other villages. For example, at the time of consultations, there were 25 clans resident in Wabo village but the community was represented by just five clans suggesting that some clans are less well established in the village than others.

Motu seafarers participating in *hiri* voyages to Orokolo Bay and the Purari River Delta called the land and the people 'Elema'. Like the seafaring Motuans that came before them, anthropologists sought also to identify the peoples of the Gulf to categories based on their perceptions of cultural affiliations and cultural differences (e.g. Holmes 1903, Williams 1940). This report considers how to consolidate and interpret cultural affiliations and differences documented during village consultations. In this report villages are structured under headings for the common languages that they speak and under sub-headings for cultural groupings that are recognised by the people themselves. Nevertheless, it is emphasised that each and every village is home to clans that maintain their own separate, and in many respects, autonomous cultural identity. For this reason, consultations at each village are documented individually. The records of community consultations used for this report avoid including researcher's own interpretations and aim to only represent the views of the key informants appointed to represent community views.

Purari and Orokolo peoples trace their histories northward to ancestral villages in the highlands and/or in the headwaters of the Purari or Vailala Rivers. Thus, this report of cultural heritage consultations begins with the four Pawaia-speaking communities whose villages are located in northern parts of the study area. From there the descriptions in this report move southward (as do ancestral migration stories). Riverways communities include six Koriki-speaking villages, five Iare-speaking villages, two Kaimare-speaking villages and single villages where the languages spoken are Ahia and Maipua. The report then describes consultations held at 15 Orokolo-speaking villages.

1.1 Pawaia-Speaking Villages

1.1.1 Ura Village

Although there are 12 resident clans at Ura village, many of these have only recently established their presence in the area and the Jaoho clan is acknowledged as the founding clan. At the request of community leaders, contributions to discussions came only from community appointed representatives from the Jaoho clan. Traditionally, women are not permitted to speak in community forums in Pawaia villages and women were not represented amongst key informants. Nevertheless, a woman's site called Moiwailedsa was identified. Moiwailedsa is a birthing site

near a small spring. Women go there to give birth in preference to travelling to the aid post, where according to informants, there is usually a lack of staff.

Key informants are aware of archaeological sites inland from Ura village but they do not view such places to be particularly noteworthy. Informants also responded that they did not have any ancestral heirlooms, which they also considered to be an unimportant matter.

Of greater interest and importance to informants are a number of spirit, ritual and sacred sites on clan lands. With the exception of Wabo Kai Seiro (see Appendix 4), spirit, ritual and sacred sites are in remote inland locations some distance from Ura village. The sites mentioned during consultations include Peiweino which is a traditional hunting ground located at the base of a cliff face where permanent water attracts an abundance of bird species. Although some distance from Ura, villagers occasionally visit Peiweino on hunting forays. In the same general location there are twin waterfalls called Twepei and Wepei, which are named after the spirit brothers that dwell there.

Also at some considerable distance inland from Ura village, there is a sacred spirit dancing ground called Joropeswanopon. The dancing ground is a flat area of open ground with large stones positioned at each end. Spirits can be seen resting on the stones and spirits are known to convene at Joropeswanopon in great numbers and perform on the dancing ground. Some of the spirits that congregate at Joropeswanopon are malevolent by nature, and informants were adamant that the site should be avoided by outsiders as interference with the site could lead to people coming to harm (Joropeswanopon is likely but not certainly north of the PAOI).

The Wabo Kai Seiro spirit site is located in the Purari River near Ura village and was formally recorded (see Appendix 4). Another spirit site located in the Purari River called Laupara was also described. The Laupara oral tradition matches very closely the story of Subuia told by key informants from Subu 2 village and there is no doubt that the Laupara and Subuia spirit sites are the same location. Subuia was formally recorded with key informants from Subu 2 village see Appendix 4). Seramaseno is another spirit site that was described but not formally recorded. Seramaseno is located in Ho Creek where a spirit snake called Mei is known to pull down the clouds to create a morning fog. As a consequence, canoes stay close to the creek bank where they are safe from Mei. The story of Seramaseno shares a similar theme to that of Sasmeia which was recorded with informants from near-neighbouring Wabo village (see Appendix 4).

With regard to intangible cultural heritage values, oral traditions pertaining to ancestral migrations and spirit sites are maintained and taught to younger generations although the importance of oral traditions is noted by informants to have declined in recent times. Women participate in clan specific traditional song and dance although traditional ways of dress are no longer used. Knowledge about making materials used for sago processing, hunting and fishing as well as hunting and fishing rituals are maintained but there was no mention of ritual activities associated with sago processing.

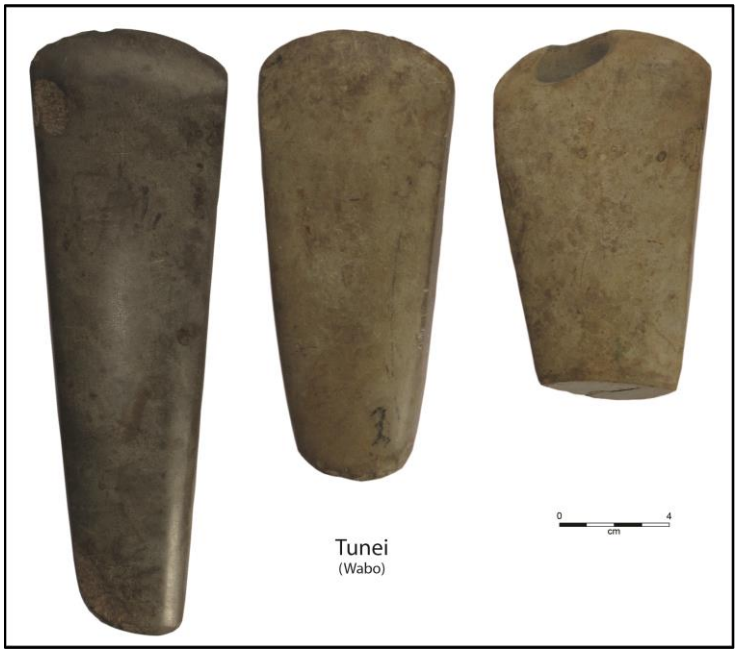
Informants mentioned that in the past men's houses provided the forum where key aspects of ancestral knowledge were passed from generation to generation. Men's houses are no longer used and informants expressed a preference for their current domestic living arrangements. They did not view non-gender segregated living arrangements as hindering the maintenance of intangible cultural heritage values and were confident that their intangible cultural heritage values are being learned by younger generations. The Jaoho clan speak the Pawaia language; informants observed that as a consequence of new arrivals in the area, their language has become less used than it was in the past.

1.1.2 Wabo Village

There are 25 resident clans at Wabo and five clans were represented during community consultations. Oral traditions recall caves at distant inland locations that were occupied during ancestral times. Informants showed examples of shell valuables (Cypraeidae sp.) that had been found on cave floors however, they did not view these finds, or the archaeological sites they originated from, as particularly noteworthy. A spirit site called Sasmeia was recorded a short distance from Wabo (see Appendix 4). Passing mention was made of other spirit, ritual and sacred sites two-to-three days' walk inland from Wabo. Details of these sites were not forthcoming although informants did say that spirit sites are important to the community. Informants also displayed three *tunei* (edge ground axe/adzes) that are kept as reminders of ancestral times (Plate 1).

Informants confirmed that ancestral migrations are recalled in oral traditions but these stories are confidential and details were not divulged. Confidential aspects of oral traditions are passed from father to son, and husbands explain oral traditions to their wives so that they can educate their sons if their fathers die before their sons reach maturity.

Plate 1 – *Tunei* (edge-ground axe/adzes), Wabo Village



Wabo informants consider intangible cultural heritage values maintained and used in their day-to-day activities to be very important (e.g. materials for hunting, fishing, sago processing and traditional medicines). Informants explained that they have been approached about future development in the area since 1975 but nothing has changed in that access to basic facilities such as health, education and trade store goods has remained limited. They therefore place heightened importance on the intangible heritage values that contribute to self-reliance and provide subsistence security. Intangible cultural heritage values that are maintained include, bush craft, traditional fire making, building techniques, fishing and hunting techniques and hunting rituals (Plate 2). Intangible cultural heritage values in the form of ancestral knowledge encapsulated in song, dance and ways of traditional dress are known only to a few old men and these values are no longer being taught to younger generations.

Plate 2 – Traditional Fire Making using the Stick-and-Groove Method, Wabo Village

1.1.3 Subu 2 Village

Subu 2 village was settled by former residents of Subu village following a major flood of the Purari River in 2014. Two of the four resident clans were represented during consultations. Arrangements were made for representatives from Subu village to join in discussions at Subu 2 but they declined to attend on the morning of the consultations and time did not allow for the team to hold a separate round of consultations at Subu. Nevertheless, as these communities very recently lived in one village, cultural heritage values recorded for Subu 2 are expected to generally align with those of Subu.

Key informants have no knowledge of archaeological sites on their clan lands and attach little importance to archaeological remains. They are aware of ancestral village sites further inland although they said that there are no archaeological materials at these sites. Community members keep ancestral heirlooms as reminders of ancestral times and these items are highly valued. One tangible cultural heritage site was recorded with informants from Subu 2, a spirit sites called Subuia (see Appendix 4).

Details of ancestral migrations are recalled in oral traditions and stories are passed down from father to son however, such oral traditions are confidential and no details were divulged. Oral traditions pertaining to spirit, ritual and sacred sites are also maintained (e.g. Subuia). Men no longer participate in traditional song and dance but women do, and women also wear traditional dress on special occasions. Intangible heritage values in the form of knowledge used to make the tools and materials for hunting and fishing and processing sago are maintained. Hunting and fishing rituals as well as rituals to improve yields when processing sago are also practiced. Key informants emphasised that traditional cultural knowledge related to subsistence activities (e.g. weaving basketry for sago processing) are very important to the community (Plate 3). Traditional medicines are also important, and an example was shown of an aromatic bark called *uai* that is used to alleviate the symptoms of respiratory illnesses.

Plate 3 – Subu 2 Village. Left: Weaving Skills Passed from Generation to Generation. Right: Lady Wearing a Traditional Grass Skirt with Boys Wearing Tapa Cloth

1.1.4 Poroi 2 Village

All four clans resident at Poroi 2 were represented during cultural heritage consultations. Key informants mentioned that Poroi 2 had been previously visited by researchers representing the previous Operator who had collected information about their cultural heritage values. They expressed reservation about being asked similar questions again and also questioned the validity of documenting details about their cultural heritage values in a single meeting. For these reasons, key informants decided that they would provide only general information about their cultural heritage values.

Informants have no specific knowledge of any archaeological sites on their clan lands and consider archaeological remains to be of low importance. They did confirm that they had knowledge of ancestral, spirit, ritual and sacred sites at distant inland locations. Particular mention was made of two rocks related to a spirit site in the Purari River. During ancestral times, a man tried to create a dam between stones called Maiebe and Warubeneai on the banks Purari River so that he could more easily catch prawns. The story shares a migration theme involving two sisters common to oral traditions told by informants from Ura village (Laupara) and Subu 2 village (Subuia), and demonstrates connections between the oral traditions of the three Pawaia-speaking villages.

Informants did say that although they maintain oral traditions about spirit sites they are practicing Christians and attach little importance to the spiritual values of the sites. Informants also confirmed that they maintain oral traditions about ancestral migrations from inland locations and that migration stories are passed from father to son. Details of the migration stories are confidential and were not divulged during consultations.

Tom Kabu (see Appendix 3) stayed at Poroi 2 for some months and cultural heritage materials were destroyed at the time. However, informants pointed out that as Tom Kabu did not speak Pawaia his influences were less at Poroi 2 than at villages nearer to the coast. Intangible cultural heritage values are maintained in women's traditional song and dance although traditional ways of dress are no longer used. Traditional knowledge is used to make the tools and materials for

hunting, fishing and processing sago. Hunting and fishing rituals are maintained by men, and women use rituals to increase yields when processing sago.

Poroi 2 villagers are keen to maintain their cultural heritage values and take a proactive approach by ensuring that cultural heritage values are taught at the Poroi School. In addition, gender specific heritage values are taught in domestic situations and learned during community activities. Poroi 2 people are proud of having maintained their cultural identity, as explained by an informant, “We have moved around but our culture is taken with us”.

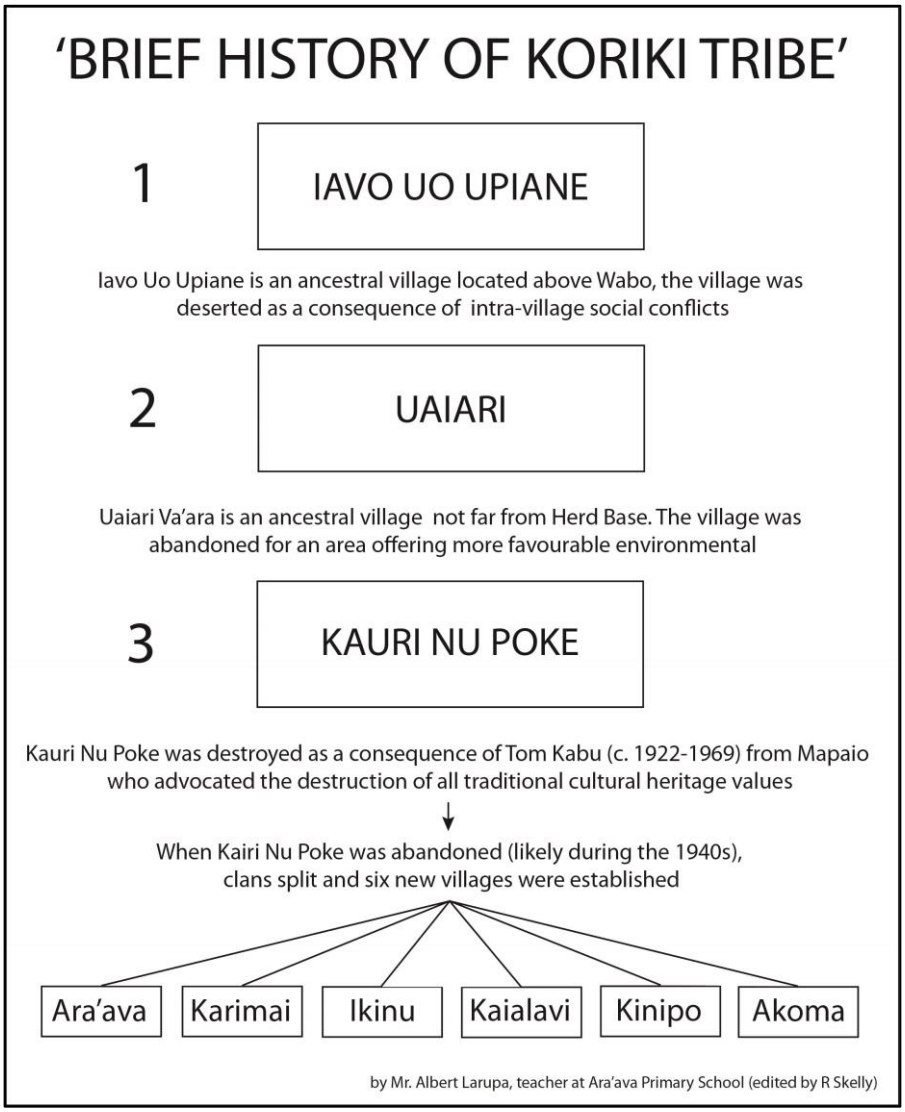
1.2 Koriki-Speaking Villages

1.2.1 Ara’ava Village

Key informants representing three of the nine clans resident at Ara’ava village requested that the cultural heritage team convene with individual clans so that they could present unique aspects of their cultural heritage. It was agreed however, that discussions would take place at a community level involving all clan representatives. Women were represented during discussions however; no women’s sites were identified.

During consultations informants spoke of archaeological sites at distant locations north of Ara’ava and said that these places are important because they contain materials left by their ancestors. Informants also confirmed that oral traditions trace ancestral migrations emanating from the mountains to the north. Details of ancestral migrations differ from clan to clan; a teacher at Ara’ava Primary School provided his understanding of Koriki ancestral history (Figure 1). Four tangible cultural heritage sites were recorded close to the village; these are spirit sites called Lavi, Mae and Vaii Veruku, and an ancestral village on the opposite side of the river called Haralua (see Appendix 4).

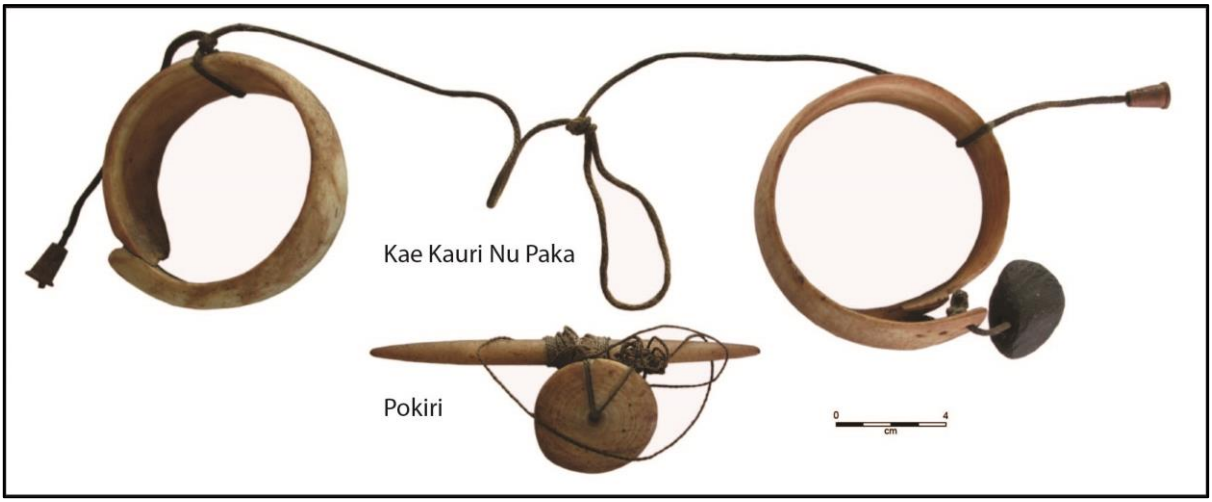
Figure 1 – 'Brief History of the Koriki Tribe'



Drafted by the teacher at Ara'ava village

Cultural heritage values were compromised during the time of the Kabu Movement. Ara'ava informants consider that their people were "ill-advised" by Tom Kabu's New Men and the losses to their cultural heritage are deeply regretted today. The few ancestral heirlooms that escaped destruction are highly valued by the community (Plate 4).

Plate 4 – Ancestral Heirlooms from Ara'ava Village; *Kae Kauri Nu Paka* (Arm Shells) and *Pokiri* (Nose Ornament)



Oral traditions recalling ancestral migrations and spirit, ritual and sacred sites are maintained and provide a common thread for community identity. Ara'ava clans trace spiritual origins to an ancestor named Koriki who lived in a sago swamp and built bridges across wetlands that allowed their ancestors to move from place to place. The entire Ara'ava community participate in traditional song and dance although traditional ways of dress are no longer used. Knowledge of how to make the tools and materials used for hunting and fishing and processing sago represent examples of intangible cultural heritage values that are maintained and valued by the community. Hunting and fishing rituals as well as sago increase rituals used during ancestral times have fallen from favour and are no longer maintained. Cultural heritage values are taught as part of the local school curriculum although most education about cultural matters takes place in the home.

1.2.2 Kairimai Village

Representatives from 3 of 12 resident clans took part in consultations. Women were represented, however, no women's sites were identified. Kairimai is one of the smaller Purari villages and tensions arose amongst informants when discussing ancestral migrations due to concerns that Kairimai oral traditions were vulnerable to being subsumed by the oral traditions of larger communities with whom they share historical ties. Informants are aware of the locations of ancestral villages in the headwaters of the Purari River that were occupied at a time when the sea reportedly came up to the hills near Herd Base. Kairimai was settled after WWII when Koriki clans abandoned Kauri Nu Poke which, according to informants, is also the penultimate ancestral village for residents of Ara'ava, Ikinu, Kinipu and Akoma villages. The cultural heritage team attempted to visit Kauri Nu Poke, however, it was unsafe for the Project vessel to negotiate the shallow waterway leading to the site. Informants were able to say that coconut and mango trees mark the site and that there are shells and pieces of pottery on the ground surface. Informants were clear that the pieces of pottery at Kauri Nu Poke do not have surface decorations, which is consistent with their view that Kauri Nu Poke traded with Motuan *hiri lagatoi* (trading vessels) that came to the village to exchange pots for sago. During the time when *hiri lagatoi* stopped at Kauri Nu Poke, the village is purported to have been nearer to the coast than it is today, since then the sea has moved further to the south. According to informants the changing coastline played a role

in Kauri Nu Poke being abandoned as people sought to move to locations better situated to taking advantage of maritime (*hiri*) trade. An alternative view of the reason why Kauri Nu Poke was deserted was given by informants from Ara'ava who said that the village was abandoned because of cultural dislocations caused by the Kabu Movement.

Prior to Kauri Nu Poke, Kairimai clans lived at an ancestral village to the north called Aneka. Discussions about ancestral migrations were abruptly cut short due to conflicting views about precise details (ancestral canoe name) contained in oral traditions. Discussions became emotional, however, tensions were sensitively resolved by a leading key informant. What consultations demonstrated is that detailed information is very important for validating oral traditions and that the precise details of oral traditions may vary even between closely related clans.

With the exception of Kauri Nu Poke, informants are unaware of archaeological sites on their clan lands and thought archaeological sites to be of only minor interest. One tangible site was recorded in the village, a spirit tree called Vaukaea (see Appendix 4).

Oral traditions describing spirit, ritual and sacred sites are maintained by the community. Like many Purari communities, cultural heritage values were affected by the Kabu Movement. No ancestral heirlooms survive and no women's sites are known to informants. The destruction of cultural heritage values at the time of the Kabu Movement caused community despondency and some villagers left Kairimai never to return. Today, the entire community participate in traditional song and dance and these performances are an important part of their cultural identity. Traditional ways of dress are no longer used. Traditional knowledge is maintained for making the tools and materials needed for hunting, fishing and processing sago. Sago increase rituals are known but women no longer teach the rituals to their daughters, hunting and fishing rituals are no longer practiced. The Kairimai community is proactive in maintaining cultural heritage values and elders visit the local school to talk about Koriki traditional life. One informant described cultural heritage values as being part of everyday life and emphasised his point describing ancestral knowledge as, "like our daily food".

1.2.3 Kairu'u Village

There are 14 clans resident at Kairu'u village; key informants were nominated from 5 clans to represent the community during consultations. Kairu'u was established when people moved to the location from a nearby area that was inundated due to changing coastal conditions. There are no tangible cultural heritage sites at Kairu'u and the community possess no ancestral heirlooms. Informants are unaware of archaeological sites in the area which is not surprising given that frequent flooding events and rapid rates of siltation would quickly bury cultural materials below the ground surface. The community maintain oral traditions detailing a sequence of ancestral villages that commences in the Purari headwaters. The nearest ancestral village is called Unia Uku Pari which is located on a river bank a number of kilometres upstream from Kairu'u.

There is a spirit site called Alau Kaipu at the river mouth to the south. Alau Kaipu can be heard at night in the form of waves crashing on the beach. During ancestral times, Alau Kaipu protected people from being taken by crocodiles or being lost at sea. Today however, the site is inactive and no longer affords the protections that were provided in the past. Informants also mentioned a spirit site called Aua Euao many hours walk inland from the village, which takes the form of a 'spirit chain' connecting the land to the sky. Oral traditions about spirit sites are passed from generation to generation although these traditions are today considered to be devoid of spiritual power.

When discussing cultural heritage values at Kairu'u, the first matter raised was the deep regret that the community feels about the destruction to cultural values brought by the Kabu Movement. Informants explained that after the Kabu Movement people became despondent and as a consequence many people died prematurely or left the village permanently. Informants are adamant that they do not want to witness a repeat of the cultural destruction that took place under the influences of Tom Kabu.

Both men and women take part in community celebrations that involve song and dance but traditional dress is no longer used. Intangible heritage values are maintained in traditional knowledge about hunting such as making spears and bows and arrows, rituals to ensure hunting success, and ways to spiritually empower hunting dogs. Girls are taught the weaving skills needed to make fishing nets and the baskets used when processing sago; however sago increase rituals are no longer practiced.

The community is proactive in maintaining intangible cultural heritage values and consider themselves well placed to do so given that the resident school teacher was born and raised in Kairu'u village. Elders are regularly invited to the school and they play active roles in educating children about their history and culture.

1.2.4 Akoma Village

Present-day Akoma was established some 70 years ago when people followed the prograding coastline southward. The previous village in their ancestral village sequence was also called Akoma and is now reportedly under sago swamp. Although maintaining close ties with near neighbouring Kairu'u village, the Akoma community have their own cultural identity based on oral traditions that detail their own unique ancestral story. The Akoma ancestral village sequence commences with Mapaio; from there people relocated to U'upu Akoma, Pana Poa, (Old) Akoma and then to present-day Akoma village. The three clans (or sub-clans) resident at Akoma were represented during consultations by two members from the Kairu'u Kari clan. According to key informants there are no archaeological materials in the area. The community have no knowledge of spirit sites and they don't possess any ancestral heirlooms.

Informants were quick to mention that a considerable amount of cultural knowledge was lost during the period of the Kabu Movement. It was reported that the losses caused by the Kabu Movement and missionary activity seriously impacted community confidence and that the community has not yet recovered from the trauma incurred because of these losses.

Intangible cultural heritage values are maintained in song and dance performed by the community, traditional dress is still used, but less so in recent times. Traditional knowledge is used to make the tools and materials for hunting, fishing and processing sago. Hunting and fishing rituals are performed although informants have no knowledge of rituals associated with sago processing. Traditional medicinal knowledge is maintained, an example that was cited is *Aravea*, a plant that is chewed as a remedy for snake bite.

Tom Kabu made Akoma his headquarters in 1955 (Maher 1958: 89). Informant, Maura Kari, described how the Kabu Movement and missionary activity impacted ways people mediate the natural environment. He said that that during traditional times, crocodiles never posed a threat to people because they were controlled by sorcerers. However, today there are no sorcerers in the village and crocodiles pose a constant physical and psychological threat to the community. Sorcery was also used to cure people's illnesses and when missionaries suppressed the use of sorcery, important and effective remedial powers were lost.

1.2.5 Ikinu Village

Key informants from Ikinu and Kakari villages participated in a joint discussion about their communities cultural heritage values. Both communities speak Koriki language and maintain cultural heritage values reflecting shared historical experiences. During consultations, Ikinu was represented by informants from three clans (Mari Kari, Koai Kenanairu and Onu Ukua Mako Vake). Key informants spoke of three ancestral village sites that were occupied during ancestral migrations; these are called Ikinu 1, Ikinu 2 and Ikinu 3. The community maintains no knowledge of spirit, ritual or women's cultural heritage sites. They also have no knowledge of archaeological materials being found on their clan lands. Oral traditions with spiritual themes are no longer maintained. The community participate in traditional song and dance and traditional dress is used on some occasions. Intangible cultural heritage values are maintained in forms of knowledge used to make the tools needed for processing sago, hunting and fishing. Forms of ritual engagement also play roles in enhancing yields from subsistence activities. Traditional medicines are used and are important to the community.

1.2.6 Kakari Village

During joint consultations with Ikinu and Kakari villagers, Kakari village was represented by key informants belonging to five clans (Ukia Lavi Kori, Onu Ukua Mako Vake, Ukuna Ukua, Aelavi Korepe Mako and Aua Akia). Oral traditions are maintained that recall an ancestral migration sequence involving at least two ancestral village sites; these are called Kakari 1 and Kakari 2. Key informants have no knowledge of spirit, ritual, or women's cultural heritage sites on their clan lands. Like near neighbouring Ikinu village, key informants have not encountered any archaeological materials in gardens and have no knowledge of archaeological sites at any location. The entire community participate in traditional song and dance and traditional dress is used on some occasions. Intangible cultural heritage values are maintained in forms of knowledge used to make the tools needed for sago processing, hunting and fishing. Rituals are used to enhance yields from subsistence activities. Traditional medicines are also used and are important to the community.

1.3 Iare-Speaking Villages

1.3.1 Mapaio Village

Key informants from 8 clans represented the 12 clans resident at Mapaio village. Oral traditions are maintained that trace an ancestral village sequence commencing in the highlands to the north. The founding village is called Kairi Uku. From Kairi Uku people moved southward settling a sequence of villages called: Vaupe, Kunou, Ikre Laua, Pairi Laua, Kairi Peair Vaivre, Pairi Mallu, and finally Mapaio. All named ancestral villages are located considerable distances inland from Mapaio. Informants have no knowledge of archaeological materials at ancestral village sites and are unaware of archaeological materials in the area of Mapaio village. Oral traditions recall spirit sites far to the north but these sites are of declining importance and no spirit sites were named during consultations. Key informants included five women but no women's sites were identified. Mapaio was the home village of Tom Kabu and it is therefore not surprising that no cultural heritage sites or ancestral heirlooms remain at Mapaio today.

Intangible cultural heritage values are maintained in the form of women's song and dance called *apa apa*. Song and dance plays a key role in educating young women about becoming a wife and a mother in Mapaio society. The performance of the *apa apa* is described taking place at a Koriki village called Ukiravi in 1922 suggesting historical connections between Koriki and Iare cultural heritage values (Williams 1924: 172) (Plate 5). Men no longer perform song and dance but older

men have memories of the *lai kiri* fighting song. Intangible cultural heritage values are also maintained in the form of weaving and tool making skills taught by mothers to daughters and used for processing sago. During consultations informants emphasised the importance the cultural knowledge that is used in day-to-day subsistence activities. Rituals associated with fishing and sago processing are known but are declining in use. Contrary to a general waning of ritual practices, informants pointed out that as game animals have become more difficult to find on their clan lands, the use of hunting magic has become increasingly important.

Plate 5 – Women Performing the *Apa Apa* Dance, Mapaio Village

The Mapaio community have names for the past eight generations and each generation is ascribed a brief anecdotal description. The present generation of youths is called Lipi Ope; the 'hard to hear' generation. Elders fear that outside influences will result in the Lipi Ope generation not learning about their cultural heritage, which will in turn jeopardise the maintenance of Mapaio village cultural identity. They expressed pessimism about cultural heritage values being maintained by the Lipi Ope generation and suggested that improved access to education and organised sporting activities would help young people to develop a more balanced and measured attitude toward their cultural heritage. Informants' views of the Lipi Ope generation resonate with the observations of anthropologist F.E. Williams at a Iare ancestral village in 1922. Williams writes that when asking a young man about history or culture, expect the answer, "How should I know? I am not an old man" (1924: 229). The Mapaio community emphasised that they "are happy with their culture" and want to keep it. Key to their aspirations is to maintain the intangible cultural heritage values that demonstrate and legitimise their cultural identity.

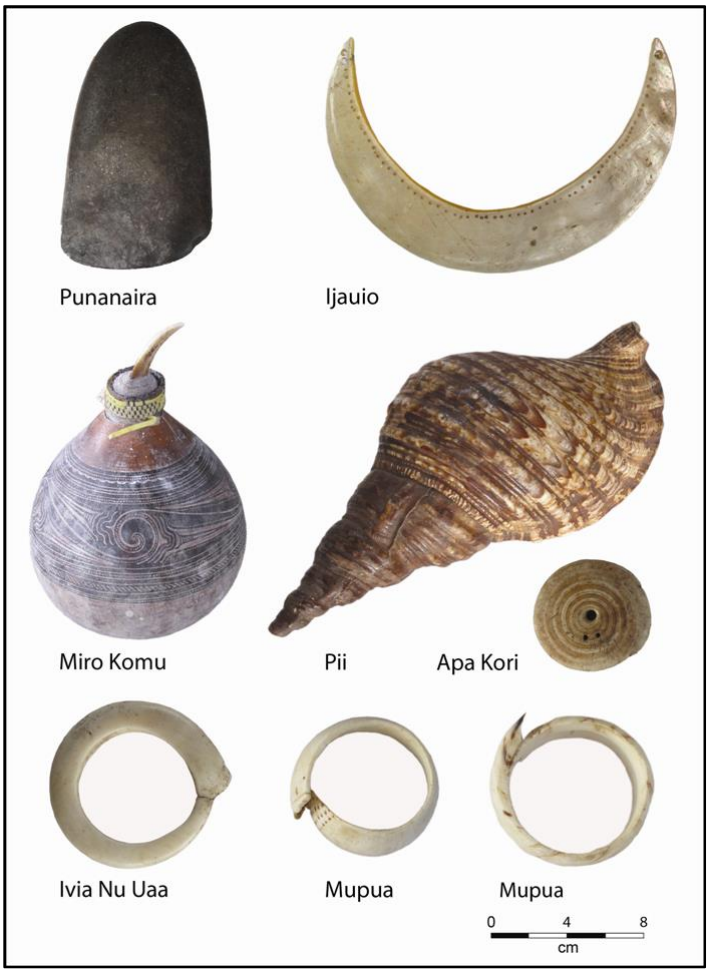
1.3.2 Kaevaria Village

Kaevaria village was founded by the Ava Nairu clan two generations before the present-day adult generation when they relocated from Mapaio village. The community maintain oral traditions that recall ancestral migrations emanating from distant locations to the north, and spanning 18

generations. Ancestral migrations were at least in part caused by changing environmental conditions; oral traditions recall a time when the sea reached the hills near Poroi 2, since then the coast has moved to the south and people have followed. No tangible cultural heritage sites were recorded at Kaevaria however, the community view their village as a spiritual location in the sense that their ancestral spirits dwell with them in the village. Although keen horticulturists, the community reported that they have not found archaeological materials while gardening and have no knowledge of archaeological sites in the area.

The Ava Nairu clan maintain an extensive inventory of ancestral heirlooms that were hidden during the time of the Kabu Movement. These artefacts include a *Koa* (story board), *Ara Vae* (drum), *Kau Koua* (head dress), *Ipi Orea* (male traditional dress), *Mapua* (arm shells), *Pii* (conch shells), *Punanaira* (edge-ground axe) and kina shells (Plate 6). These items are highly valued by clan members and are still used when performing song and dance and during traditional celebrations such as weddings. Women wear traditional dress when singing and dancing although the use of traditional dress is declining amongst younger women.

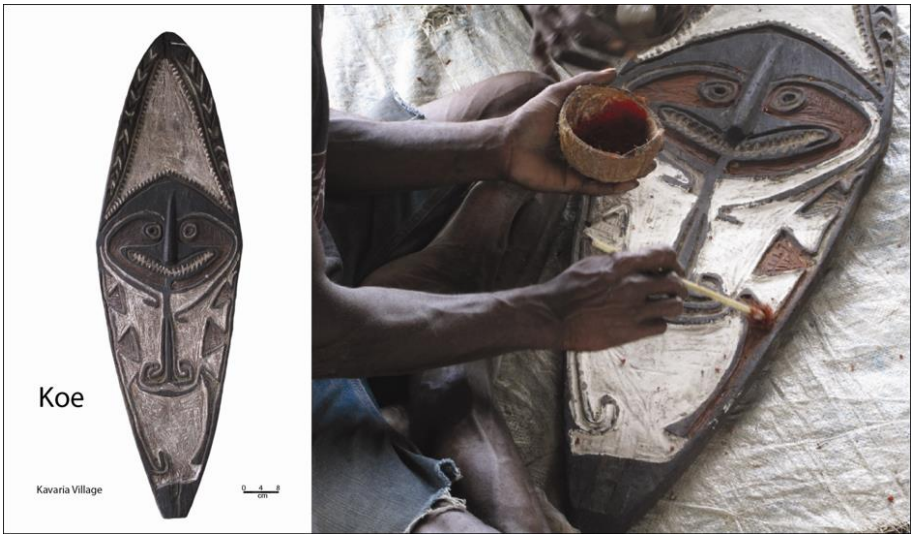
Plate 6 – Ancestral Heirlooms, Kaevaria Village



During community consultations (and unprompted), young men demonstrated their knowledge of traditional ways of making pigments for decoration and painting techniques (Plate 7), and women performed song and dance wearing traditional dress and heirloom shell ornaments (Plate 8).

The introduction of metal fish hooks and nylon fishing nets has eroded knowledge about traditional fishing materials, otherwise traditional knowledge related to subsistence activities such as hunting and processing sago are maintained. In addition, women teach their daughters increase rituals used when processing sago and men teach their sons rituals that are used when hunting and fishing.

Plate 7 – Koe Board repainted by Kairi Aivei, Kaevaria Village



As men's houses are no longer used, intangible cultural heritage values are passed from generation to generation in domestic situations. The community is confident that changing domestic arrangements have not had negative impacts on maintaining intangible cultural heritage values. The Kaevaria community emphasised the opinion that their cultural heritage values should be viewed as separate and different to those of other villages. They are confident that they will maintain their intangible cultural heritage values and view the transmission of knowledge to younger generations as "instinctive" and therefore inevitable.

Plate 8 – Women's Song and Dance, Kaevaria Village

1.3.3 Aivai Village

Aivai village has four resident clans. During consultations the community was represented by key informants belonging to the Vaii Ona Nairu clan. According to a key informant, Aivai village came under the influence of Tom Kabu and a considerable amount of cultural knowledge was lost as a consequence. Today, the community maintain oral traditions that detail ancestral migrations through four villages. The migration sequence commences from Subu where oral traditions recall a social schism taking place seven generations before the present-day senior adult generation. As a consequence, the Vaii Ona 'tribe' relocated to Vaii Vavere (see Appendix 4). From Vaii Vavere they moved to Mailea, and then to present-day Aivai. Archaeological sites are known at some distances from the village and material traces of ancestral activities are considered to be important by the community. The cultural heritage team also recorded the Akia Ini Laua spirit site complex, which spans three separate locations a short distance from Aivai (see Appendix 4).

Villagers maintain Christian values and have almost abandoned traditional spiritual values. Oral traditions that explain the story of sites such as Akia Ini Laua are valued for the moral lessons that they tell, however traditional spirit sites are considered to be devoid of spiritual power. Elders have knowledge of traditional song and dance but these cultural heritage values are no longer taught to younger generations. Intangible cultural heritage values are maintained in knowledge used to make the tools and materials used for hunting, fishing and processing sago. Rituals related to subsistence activities are no longer practiced.

1.3.4 Aumu Village

All four clans resident at Aumu were represented during consultations. Consultations took place on a Saturday morning and the team arrived to the sound of the village leader trumpeting long blows on a *pii* shell to inform villagers that they should come to the village meeting place (Plate 9). Aumu is an abbreviated form of the village name Aumu Iare Kivau and Aumu is also known as 'Iare' as distinct from 'Old Iare' which is the penultimate village in the Aumu ancestral village sequence. Old Iare is located upstream from Aumu; anthropologist F.E. Williams stayed at the village in 1922 and documented aspects of traditional life at that time (see Williams 1924). Tom Kabu visited Old Iare after Williams, and as a consequence men's houses were burned and the social discordance that was caused was at least partially responsible for people relocating to

Aumu. Regardless of losses attributed to the Kabu Movement, the village leader explained, “we are still holding our customary stories”.

Plate 9 – Village Leader using a *Pii* (conch) Shell

The Aumu community maintain oral traditions that trace origins to ancestral places in mountains to the north. Aumu ancestors left the mountains nine generations before the present-day adult generation due to pressures on resources such as hunting grounds. Informants are aware of archaeological sites north of Aumu, which they view as material evidence of their ancestral migration. James Kauri Aua explained that oral traditions about ancestral migrations are maintained because, “[people] must understand their origin. Where they come from”.

Spirit sites are known but are generally at some distances inland from Aumu. The most important spirit site is a “stone wall” or “dam” near Poroi 2 village called Mairi Vaara. Oral traditions recall three ancestors, brothers named Aiapo and Maiao and their sister named Kairua digging out the river bed at Mairi Vaara to widen the Purari River. When they finished widening the river they settled at Kaivere but soon decided to leave. They needed to cross the river, so they engaged with a spirit called Kiriva Vai Mu Mare that resided in a black palm located at Kaivere. The spirit in the black palm lay down across the river allowing the brothers and their sister to cross to the other side. Once they had crossed the river they sacrificed a white dog to Kiriva Vai Mu Mare and the black palm stood up again. The brothers and sister continued southward and settled at Lalareanuparii and later continued southward to Old Iare. Old Iare is a few kilometres upstream from Aumu (location was not recorded); informants are familiar with the site and reported that there are shells (but no pieces of pottery) on the ground there. They also have knowledge of other archaeological sites further inland that they view as material evidence of their ancestral migration.

Today Iare remains the language used by villagers at Aumu however, the community raised their concern that the Iare language is under threat from the increasing use of non-traditional languages (Tok Pisin and English). Informant, Paua Ivia, explained that oral traditions are embedded in Iare language and that the subtle nuances and contextual information contained in oral traditions is lost if told in a language other than Iare.

The community emphasised the importance of traditional medicines as they live a long way from any alternative form of medical assistance. Cultural heritage values in forms of traditional song,

dance and dress are no longer maintained. Cultural heritage values are maintained in forms of traditional knowledge used to make the tools and materials used for hunting, fishing and for processing sago (Plate 10). Hunting and fishing rituals are used but increase rituals related to sago processing are no longer practiced. Although men's houses (*Mai Lavi*) were destroyed more than 50 years ago, boys houses (*Aiae Aiae Lavi*) are still used. Adolescent boys share a house in the village and are free to follow their own pursuits; the community view the boy's house as a place of learning that boys need before taking on adult responsibilities.

Plate 10 – Boys Practicing Hunting Skills, Aumu Village

1.3.5 Maipenairu Village

Maipenairu is an Iare-speaking village and is home to four major clans. All four clans were represented during community consultations. Oral traditions recall an ancestral migration that commenced when Maipenairu clan ancestors left the Southern Highlands. An ancestral village called Maipenairu 1 is named in the sequence. Informants know the sites location and reported that there are archaeological materials on the ground surface at the site. The community expressed concerns that social and economic change in the Purari region could lead to a reduction in the use of the Iare language. The community are concerned that young people may leave Maipenairu to seek education and/or employment opportunities which could in turn lead to a decline in the use of Iare language. The main concern is that a decline in the use of Iare language would have flow on implications for the maintenance of intangible cultural heritage values. Today the community participate in traditional song and dance and traditional dress is worn on special occasions (Plate 11). Intangible cultural heritage values are maintained in forms of knowledge used to make the tools needed for processing sago, hunting and fishing. Forms of ritual engagement also play roles in enhancing yields from subsistence activities. Traditional medicines are used and are important by the community.

Plate 11 – Traditional Dress, Maipenairu Village

1.4 Ahia -Speaking Villages

1.4.1 Evara Village

There are 7 major clans (16 sub-clans) resident at Evara; key informants representing the community were nominated from 3 clans with long residency in the village. People speak Ahia, and consider their language important for maintaining cultural heritage values. Clan elders provided details of ancestral migrations naming six ancestral villages spanning seven generations. The details of the ancestral migration are confidential and are not reported here. Oral traditions recalling spirit sites are maintained by the community although there are no spirit sites close to the village and informants were not forthcoming with information about these sites. Key informants professed no knowledge of archaeological sites and do not consider archaeological materials to be particularly noteworthy.

Informants described major residential and social dislocations caused by kiaps (patrol officers during colonial administration) and missionaries, which by their reckoning occurred in the early part of the twentieth century. More recently, Evara has been exposed to external influences brought by logging activities and inward migrations. However, the Kabu Movement was not a major factor at Evara.

The community reacted enthusiastically to enquiries about their cultural heritage values and in response presented a range of cultural material items for discussion. These included items passed down through many generations as well as items that have been recently made. All the items mentioned below are still used today. Ancestral heirlooms are used during ceremonial activities as well as celebrations such as weddings, Independence Day and Christmas. Men and women take part in song and dance and these cultural values are enthusiastically maintained. Shell valuables are worn during dances and are exchanged as part of traditional bride price (Plate 12). Traditional dress in the form of grass skirts (*make*) and head dresses are (*kiava haro*) are worn by women although traditional dress is declining in use amongst younger women (Plate 13).

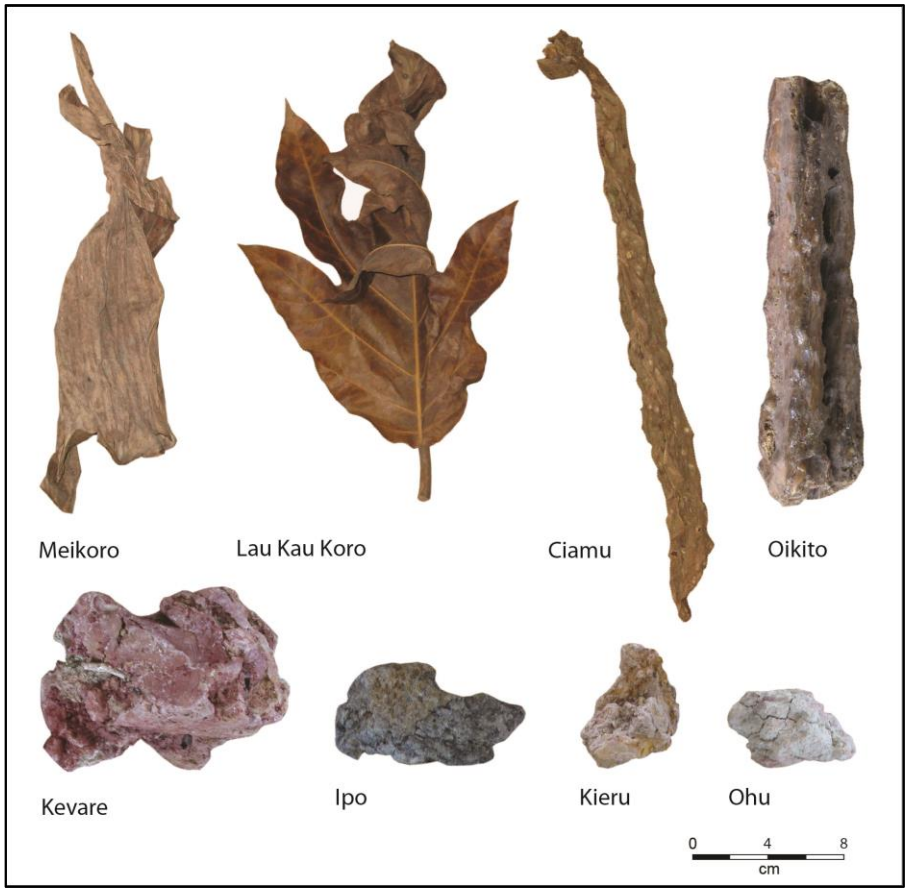
Plate 12 – Shell Valuables, Evara Village

Knowledge of how to make the materials and tools used for processing sago is passed from mother to daughter. Girls also learn ritual incantations that increase sago productivity. The community also maintain knowledge about making materials used for hunting and fishing as well as rituals that enhance their returns.

Plate 13 – Material Culture Items, Evara Village. *Howa* (Spear), *Kiava Haro* (Head dress), *Ereao* (Clay Pot) and *Opo* (Drum)

The community displayed natural materials used in their day-to-day lives. These include locally obtained clays used to make pigments for body painting and decoration, leaves used for making cigarettes, native tobacco and a slow burning material described as a 'bush candle' (Plate 14). Knowledge of an extensive range of traditional medicines is also maintained by the community.

Plate 14 – Material Culture Items, Evara Village. *Meikoro*, *Lau Kau Koro* and *Ciamu* used for Making Cigarettes; *Oikito* Bush Ca*ndle;* Clay Pigments*, Kevare* = Red*, Ipo* = Black*, Ohu* = White*, Kieru* = Yellow



1.5 Kaimare-Speaking Villages

1.5.1 Upaia Village

There are five resident clans at Upaia village and all clans were represented during consultations. Oral traditions trace ancestral migrations through five villages. The founding village called Namaina is in mountains to the north, from there people moved sequentially to Maura Bana, Mariki, Upaia-1, and then to present-day Upaia. Based on genealogical reckoning, Upaia clans reached their current location around 110 years ago although settlement timing is unclear as one informant mentioned that Maura Bana was abandoned at the time of the Kabu Movement (1940s-1960s), which would suggest that Upaia was settled more recently. Changing environmental conditions and rapid coastal progradation have played a key role in causing people to move from place to place. Oral traditions detailing the ancestral migration sequence are taught to both boys and girls. Informants are unaware of archaeological sites in the area and do not consider archaeological materials to be of particular interest. It remains unconfirmed whether there are spirit sites in the area. Informants professed no knowledge of spirit sites however; doubts remain because informants with strong Christian views dominated discussion and there may be villagers who maintain traditional values and recognise spirit sites in the area.

Previous generations passed on fond recollections of *hiri* exchanges and people keep *hiri* trade pots as reminders of these past relationships (according to informants the last *hiri* was in 1947) (Plate 15). Intangible cultural heritage values are maintained in song, dance and traditional ways of dress used on special occasions. Ancestral knowledge is maintained for making the tools and materials needed for hunting and processing sago. Women sometimes still use fishing nets made from natural fibres but weaving fishing nets is considered to be arduously time consuming and nylon nets are now preferred. Girls no longer learn how to weave fishing nets, however, girls do learn how to make *orea* (fish traps) as these cannot be replaced by manufactured alternatives. Depending on how they view Christian values, some villagers maintain hunting and fishing rituals and some do not.

Plate 15 – Heirloom *Hiri* Trade Pots, Upaia Village

Informants expressed a strong community desire to maintain their intangible cultural heritage values. Cultural heritage values are taught in homes and in the local school. The school teacher comes from Upaia and his mother is a vocal proponent for maintaining cultural heritage values. Informants were of the opinion that if a teacher comes from another village they should be trained in the cultural heritage values of the village where they teach.

1.6 Maipua-Speaking Villages

1.6.1 Apiope Village

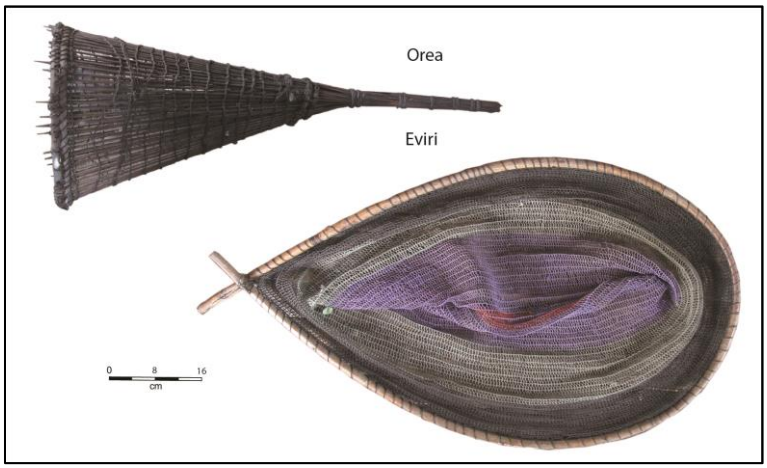
There are 16 resident clans at Apiope village and representatives from 2 clans were nominated to represent the community during consultations. There are two tangible cultural heritage sites near the village. One is a women's spirit site called Vaea. Women consider the site to have lost its spiritual potency and oral traditions about the site are no longer taught to young women. Nevertheless, male informants said that if you attempt to walk through Vaea your footprints disappear and they do not go there for fear of being attacked by spirits. The river mouth is also a spirit site and is home to a spirit being who takes the form of an eagle called Yemelavi. Due to contrasting Christian and traditional views about cultural heritage values, discussions about spirit sites were muted. Informants reported that they do find pieces of pottery when gardening although there are no archaeological sites near the village. Villagers keep heirloom shell valuables obtained during *hiri* exchanges that are exchanged as part of bride price.

Oral traditions trace Apiope history through 13 ancestral villages. The founding village called Diai is in mountains to the north and was occupied at a time well beyond genealogical reckoning. From Diai, people moved through a succession of villages: Subu, Umeni, Baibere, Bikoki, Birua and Ore. Ore is a significant village in the sequence as this was the juncture where the Orokolo clans broke away from Maipua clans and moved to the east. The Maipua clans then occupied a sequence of short-term settlements called: Vari, Aukia, Vaveko, Aia, Aivei and Apiope. The nearest of the past settlements is an ancestral village many kilometres inland from Apiope village. Informants are aware of spirit sites called Kerara Kuripi and Numere at distant inland locations however, these sites are of declining importance and no further information about the sites was offered.

The traditional knowledge used to make tools and materials used for making sago as well as specific sago processing procedures are taught to girls (Plate 16). Knowledge about how to make tools for hunting and fishing is also maintained by the community (Plate 17). Rituals related to hunting, fishing and sago production are no longer practiced. Men said that they give their dogs a potion made of bark before they go hunting but were adamant that the potion has no spiritual power it just possesses properties that make dogs keener hunters. It is common throughout in the Gulf region for villagers to give dogs a potion made from bark before hunting although villagers usually say that the potion has magical power. Men and women take part in traditional song and dance on special occasions but traditional forms of dress are no longer used. Traditional medicines are important because other forms of medical assistance are difficult to access. When the school was open, elders were invited to provide children instruction on tradition song and dance. The practice ceased when the school closed and today cultural heritage values are taught in the home.

Plate 16 – Right: Tools and Materials used for Processing Sago. Left: Woman Processing Sago, Apiope Village

Plate 17 – *Orea* (Fish Trap) and *Eviri* (Fishing Net), Apiope Village



1.6.2 Mariki Village

Mariki village is home to 13 clans, and key informants from 4 clans (Apilavi, Kavlavi, Koilavi and Kaulavi) represented the community during consultations. Mariki villagers speak Maipua language and key informants expressed the communities concern that their traditional language could be diminished by social changes caused by economic developments in the Purari region. Mariki oral traditions recall an ancestral migration sequence involving three ancestral villages (Kaimare Daua, Kairi Purari and Mairau Pairi). Two spirit sites are recalled in oral traditions (Are'akere and Kara). Are'akere is the oral tradition site where the first fire was brought down from the sky, which allowed Mariki people to cook their food. Are'akere remains an important and sacred area where there are restrictions on activities such as hunting and gardening. The entire community participate in traditional song and dance and traditional dress is used on some occasions. Intangible cultural heritage values are also maintained in knowledge used to make the tools needed for processing sago, hunting and fishing (Plate 18). Rituals are maintained that are used to enhance yields from subsistence activities. Intangible cultural heritage values in the form of knowledge about traditional medicines remain important to the community.

Plate 18– Fish traps, Mariki Village

1.7 Orokolo-Speaking Villages

Based on locally recognised social and cultural differences, Orokolo villages are divided in to three (self-identified) groups; the northernmost group of villages are those in the Muro area, an area known locally as 'Inland Popo'. Ancestral stories told at Inland Popo direct southward toward ancestral locations nearer to the coast. Beach-fronting villages in Orokolo Bay are divided into two locally self-identified groups; a western group comprising 'Coastal Popo villages' and an eastern group comprising 'Orokolo villages'.

Inland Popo Villages

1.7.1 Huruta Village

Huruta is home to five resident clans, and representatives from two clans were nominated to take part in consultations. Huruta clans speak Orokolo language and informants are of the view that their language is essential to the community maintaining their cultural heritage values. They say this because in their view, cultural heritage values can only be fully expressed and understood in the language that created them. In addition to the importance of language in recalling oral traditions, Orokolo language is important for maintaining ancestral knowledge used for gardening, hunting, fishing and processing sago.

Oral traditions detailing ancestral migrations begin from Puku in the headwaters of the Purari River. From Puku people moved sequentially to Ovuvura, Purari, Muro, Popo and Heve. Popo is viewed as the key location in the sequence because it was there that the foundations of Huruta cultural knowledge were established. As an example of cultural knowledge passed down from Popo, informants told the story of Lavi and his wife Hikakauva. The story is a tale of infidelity and retribution, which is told today as a lesson in proper community behaviour. From Popo, Huruta clans moved north to Heve, and then to present-day Huruta. Informants reported regularly finding

pottery sherds in their gardens and that they consider such finds to be important because they view these artefacts as having been left there by their ancestors.

Spirit sites remain a physical part of the cultural landscape although many of the oral traditions related to spirit sites have been forgotten and the spiritual potence of sites has faded. The importance of spirit sites varies amongst villagers. Spirit sites are unimportant to villagers maintaining strict Christian values, whereas to those who accommodate both Christian and traditional beliefs, spirit sites remain important.

Traditional song and dance is performed at community celebrations. However, whether performances will continue with future generations is in doubt as much of the cultural knowledge maintained in song and dance is fading from community memory. Traditional knowledge used for hunting, fishing and sago processing as well as hunting and fishing rituals are maintained. Ancestral heirlooms such as shell valuables are kept as reminders of ancestral times although these items no longer change hands as part of bride price. The community attribute high importance to their intangible cultural heritage values; as an informant explained, these values, “show who we are”.

1.7.2 Paevera Village

Paevera is home to five clans; representatives from three clans took part in consultations. The community maintain oral traditions detailing ancestral migrations commencing in the highlands far to the north. The only ancestral sites that were named are Heve and Popo. Women’s sites are known to male informants however, there were no female informants available who could provide details about the sites. The community keep a selection of ancestral heirlooms such as shell valuables and stone tools. According to senior male informants, oral traditions about spirit, ritual and sacred sites are fading quickly from community memory. Archaeological materials are regularly found in gardens and are viewed as material evidence of ancestral activities.

Men and women participate in song and dance and women wear traditional forms of dress at community celebrations such as weddings. Cultural heritage values used in subsistence activities are described as a ‘package’ involving inter-connected knowledge about hunting, fishing, sago processing, hunting magic, fishing magic and sago increase rituals. These intangible cultural heritage values are actively maintained by the community. Traditional medicines are important because the aid post in Orokolo Bay is very unreliable.

Elders expressed their disappointment at having witnessed the erosion of cultural heritage values during their lifetimes. With translations from Hiri Motu through Tok Pisin to English, elders explained that, “[ancestral] knowledge is our base … where we come from … when there is history there is life”.

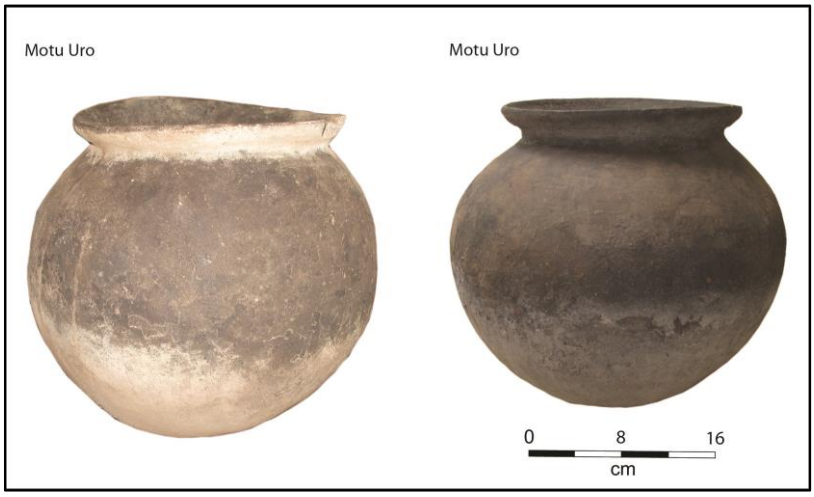
1.7.3 Ere and Kilavi Villages

Ere and Kilavi are contiguous villages and community leaders decided that key informants from both villages would take part in a single meeting to discuss cultural heritage values. Each village has 7 resident clans, 1 clan is resident at both villages thus together there are 13 clans resident in the two villages. Informants told of oral traditions that trace ancestral migrations commencing from the headwaters of the Purari River and tracking southward from there. Details for most of the sequence are confidential and were not documented (confidentiality may be due to two communities being involved in discussions). What can be reported is that an ancestral village called Kaukpa Horo, three hours’ walk to the north, is an important place where there are many ancestral burials and the area is avoided by villagers today. It can also be reported that the

ancestral sequence includes past settlements at Heve and Popo. Popo is the penultimate village in the ancestral sequence and is described as having been a large village that was a key dispersal location for Muro clans. Heve Hill is the most important spirit site in the area and was documented with informants from Ere, Kilavi and Paevera villages. While walking to Heve, pottery sherds originating from stratified deposits were found on the ground in an area that had been cleared for gardens (for detailed descriptions see Appendix 4). Informants also mentioned spirit sites called Arara Kaipu and Moro Kaipu however; both sites were damaged during recent logging activities and are no longer spiritually active. Informants did not consider that Arara Kaipu and Moro Kaipu warranted detailed discussion.

The community maintain intangible cultural heritage values in song, dance and forms of traditional dress. Young people are taught how to make the tools and materials needed for hunting, fishing and processing sago. Rituals are also maintained that are used when hunting, fishing and processing sago. Traditional medicines are used in favour of attending the poorly stocked aid post. Ancestral heirlooms are kept by communities and examples of *hiri* trade pots were displayed during consultations (Plate 19).

Plate 19 – Heirloom *hiri* Trade Pots, Ere and Kilavi Villages



Informants spoke of the pride that the community felt for their cultural heritage values. They also expressed the view that with many aspects of ancestral knowledge maintained by individual clans, ancestral knowledge was more vulnerable than it would be if it were shared by the broader community. Informants emphasised that oral traditions remain important for teaching young people the cultural protocols essential to maintaining good social order in their villages.

1.7.4 Avavu Village

There are five resident clans at Avavu. Oral traditions recall an ancestral migration sequence that includes Heve Hill and Popo. Archaeological materials are found on clan lands and such finds are considered to be important. Women only sites are present, and traditional knowledge about these sites is passed from mother to daughter. Valued ancestral heirlooms are kept by the community. Intangible cultural heritage values are expressed in song and dance performed by men and women. Forms of traditional dress are used on community occasions. Knowledge about making tools and materials needed for hunting, fishing and sago processing are maintained. In addition, rituals used when hunting and fishing as well as for processing sago are also maintained. All 15

categories of intangible cultural heritage values that were discussed are important to the community.

1.7.5 Hepere Village

There are four resident clans at Hepere. The community maintain oral traditions about an ancestral migration that includes Heve Hill and Popo. Archaeological materials are found in gardens but these items are of little interest to the community. Spirit sites are present on clan lands, women only sites are also present, and knowledge about these places is passed from generation to generation. However, oral traditions about traditional spirit, ritual and sacred sites are fading from community knowledge. The community keeps valued ancestral heirlooms. Intangible cultural heritage values are maintained in song and dance performed by women. Traditional forms of dress are no longer used. Knowledge about making the tools and materials needed for hunting, fishing and sago processing are maintained. In addition, rituals used when hunting, fishing and processing sago are also maintained.

Coastal Popo Villages: West Orokolo Bay

1.7.6 Marea Village

There are four clans resident at Marea village; informants from two clans took part in community consultations. The community maintain oral traditions detailing an ancestral migration that began when their ancestors left a village called Uivi that is located far to the north. They travelled south from Uivi and established a new village also called Uivi. From there they were led by the ancestral leader named Ere Kaiva and tracked the Vailala River northeast into the mountains. Ere Kaiva looked down from a mountain top in the Vailala headwaters and saw rich lands in the Purari River Delta. He then led his people down to the Purari River Delta. Once established there, Ere Kaiva developed a swollen stomach, which was pierced. His stomach released the water that created three rivers called Varoi Purari, Eoo Purari and Arere Aivea. During subsequent migrations, ancestors moved progressively southward. As one informant explained, “our ancestors moved with the coastline … they moved as the land extended, they moved to the next place and to the next place, and this is the land [Marea village] they [finally] settled in”.

Heve and Popo were the sites of successive beach-fronting ancestral villages occupied at the time that the sea was moving to the south and the Orokolo lowlands were forming. Today, Heve and Popo remain the two most important ancestral locations in oral traditions. According to an informant, all Orokolo speakers share cultural connections to Heve Hill.

As the coast moved to the south and Heve became remote from coastal resources and trading opportunities, people moved to a new coastal village called Popo and lived in a village section called Ita. Popo was home to all Orokolo clans however, due to social upheavals Popo was abandoned and the Orokolo clans went their separate ways. After leaving Popo, Marea village ancestors moved to the west and established a village called Irapuipiarumirie. Informants describe Irapuipiarumirie as a significant ancestral village site located around one kilometre west of Popo (indicative location only). Irapuipiarumirie is described as a ‘long walk’ from Marea village, the sites location has not been mapped, however if required, informants are willing to guide surveys to the exact location of the site.

No spirit sites were identified and oral traditions related to spirit sites are no longer maintained. Informants also have no knowledge of women’s sites and offered no information about archaeological sites or materials. Orokolo language is important to the community, an informant

expressed the view that, “our language is very important to keep our culture alive”. Intangible cultural heritage values in the form of knowledge used for making the tools and materials used for processing sago are maintained. Nylon fishing nets are used in place of traditionally woven nets and knowledge about making hunting implements is fading in favour of imported items. Rituals are maintained that are used to improve yields when hunting and fishing as well as when processing sago. Traditional song, dance and ways of dress are no longer maintained by the community. Traditional medicines are important and a resident sorcerer is considered to provide effective but expensive remedial treatments for illnesses. Informants view their oral traditions as playing a key role in guiding younger people on how they should conduct themselves in the community.

1.7.7 Harevavo Village

Harevavo is home to five clans; representatives from four clans took part in consultations. Oral traditions recall ancestral migrations involving four settlements in the Purari River Delta. The ancestral village names are confidential and were not documented. It can be reported that Harevavo clans lived near Heve Hill in a village called Kerarapo. From Kerarapo, an ancestral leader named Heve led his people to Popo. According to informants, all Orokolo clans lived at Popo and they only dispersed due to serious social unrest caused by incidents of adultery. It was Heve’s son Horela who led Harevavo clans away from Popo and to a new, then coastal village, called Kaura Ipi. From there an ancestor named Hape led them to Miravi Lavi and from there to Harevavo. The four relocations spanning Kerarapo to Harevavo took just six generations. People moved frequently because as the coast was prograding, shifting swamplands regularly made village locations uninhabitable. Informants reported finding pottery sherds in their gardens and they consider these finds to be important.

Harevavo clans do not maintain oral traditions about traditional spirit sites although informants did point out that when people followed their ancestral pathway, the spirits of their ancestors travelled with them. Confidential details of ancestral migration stories are passed from father to son whereas general themes are openly discussed amongst the community. Songs are important for maintaining oral traditions describing historical events. As one informant explained, “when you know the song you know the history and when you know the history you can sing the song”. Traditional song and dance is performed by men and women and women wear traditional dress at community celebrations. Informants did mention that many of the themes contained in traditional song and dance have faded from community memory over recent decades. Christian themes are now part of oral traditions, Epe Loaki (Adele Island) in the mouth of the Purari River Delta is the place where Moses was lost and Hari Hoho Creek at Heve Hill is the place where Jesus was baptised. Both these locations are important to the community.

Although western manufactured materials such as nylon fishing nets and metal blades are used, knowledge of how to make the tools and materials used for hunting, fishing and sago processing are maintained and are considered important for subsistence security. Ritual practices are also important for enhancing catches when hunting and fishing, as well as for promoting sago growth. Traditional medicines are considered more effective and more reliable than western medicines obtained from the poorly equipped aid post. Few ancestral heirlooms survive although we were shown a highly valued arm shell. It is not the materiality of the arm shell that is highly valued today, but the ancestral knowledge that the arm shell has come to represent. Oral traditions are used to teach children how to be good community members and are viewed as important for maintaining good social order.

1.7.8 Kaivukavu Village

Kaivukavu is home to six clans, informants from four clans represented the community during consultations. During discussion informants brought up the issue of tribal affiliations and asserted that they do not identify to a tribal group. They reject references to 'tribes' and in their view the clan is the most important social unit. Illustrating their view, one informant pointed out that the same clans live in many different villages on the coast in the Gulf of Papua and for that reason villages cannot be divided regionally in to tribes.

Oral traditions recall an ancestral migration commencing from Lake Kutubu to the northwest. When ancestors left Lake Kutubu the first place they stopped was Wabo. From Wabo they moved to the south and lived at: Subu, Poroi 2, Purari Kaohere (Muro), Heve, Apaura, Maiaro, Popo and Kaivukavu.

Language changed over time and reached the juncture where people could no longer understand each other, which caused them to move to different locations. Linguistic shifts are described as taking place in tandem with the emergence of the *Eravo* (men's houses) as the social and cultural locus of life in coastal Popo.

When people lived at Heve, it was a beach-fronting village and oral traditions recall a spirit woman living there called Mapore. Mapore did not have a mouth and could not speak. Ancestral beings put in train a spiritual transformation and created a mouth for Mapore. When she spoke for the first time, land formed out of her words and the coast started to extend southward. At that time Popo was under the sea, as land formed Popo emerged to form dry land near a newly formed beach. Ancestors relocated to Popo, which became home to all Orokolo clans. Events leading to the abandonment of Popo are traced to a man who stood 12 feet tall. He committed adultery, which commenced a series of serious disruptions amongst the Popo clans. He was too big to fight so one of his enemies climbed a coconut tree and dropped a coconut on his head, which killed him. After that the Orokolo clans left Popo and went their own separate ways. After leaving Popo, Kaivukavu ancestors lived in many short-term villages as they were forced to move from place to place by the ever-changing coastal environment. Archaeological materials are not found in close proximity to Kaivukavu, although pottery sherds are abundant in gardens further inland, particularly gardens near Popo.

No traditional spirit, ritual or sacred sites are known to informants although oral traditions involving spirits are maintained. The community maintain intangible cultural heritage values in song and dance and traditional forms of dress are worn on special occasions. Themes in song and dance have changed over time to suit changing social situations and today's themes are different to those of 50-60 years ago.

Traditional knowledge used to make the tools and materials used in hunting, fishing and processing sago are maintained. Rituals are used to improve results from fishing and are considered essential when hunting otherwise "you will come back with nothing". Rituals are also used to improve yields from processing sago. Traditional medicines are used and residents only go to the aid post if traditional medicines don't work. Orokolo language is important for maintaining cultural heritage values. Informants did point out that maintaining Orokolo language is difficult when it is not a written language and when children are learning from books written in English.

1.7.9 Iuku Village

Iuku is home to seven clans, representatives from five clans participated in consultations. Iuku clans trace ancestral origins to a cave called Iuku located in the Southern Highlands. When they left Iuku they moved to nearby Mere Iuku, and subsequently to Kaineku near the headwaters of the Purari River. As a consequence of social problems they left Kaineku under cover of darkness. A tree on the bank of the Purari River lay down to create a bridge and the Iuku clans crossed the Purari River leaving the Pawaia clans behind. Over time, they continued to move in search of better land eventually finding good land at Mai Lapa on the banks of the Vailala River. At that time the Vailala River was a small creek. Waves lapped beaches along the base of coastal hills and all land to the south was swamp. During the time that they lived at Mai Lapa, Iuku ancestors witnessed the sea moving southward and new land emerging in the Purari and Vailala River deltas. They left Mai Lapa to venture to these new lands and established a coastal village called Opura. The coast continued moving southward and Opura became swamp so they moved to Hare Kila near Kilavi. From there they ventured to Heve, but were frightened by the spiritual power of the waves they saw crashing on the beach at Heve and retreated back to Hare Kila.

Eventually they returned to Heve and established a village there. However, the coastline changed quickly and preferring to live near the sea they relocated to a new beach-fronting location called Popo. Popo was a large village then, and was home to all Orokolo clans. There was a man who stood 12 feet tall living at Popo. The ‘giant’ committed adultery and as consequence, serious conflicts erupted amongst the Orokolo clans. The conflicts reached a climax when an aggrieved villager climbed a coconut tree and took revenge on the giant by dropping a coconut on his head and killing him. After the giant had been killed the Orokolo clans dispersed from Popo. That was six generations before the birth of a 71 years old senior informant, assuming a 25-30 year generation span that would put the abandonment of Popo 220-250 years ago. Pottery sherds are regularly found in gardens inland from the coast particularly near Popo and these finds are considered an important reminder of ancestral times.

The first missionary is remembered arriving at Iuku in 1932, and today the community maintain Christian values. Informants do not know of any traditional spirit, ritual or sacred sites that are recognised by the community. Traditional song and dance is no longer performed although women do wear traditional dress on some special occasions. Intangible cultural heritage values are maintained in the knowledge used to make the tools and materials needed for processing sago. Girls are also taught rituals that promote sago growth. For the majority of villagers, traditional knowledge about hunting has been forgotten although some villagers make spears and bows and arrows and perform rituals to draw game closer to them. Women perform rituals to increase their catches when fishing but knowledge of how to weave fishing nets is no longer maintained. Nylon nets are used for fishing and mosquito nets are used to catch prawns. Traditional medicines are important and the community has little confidence in the local aid post. Informants are very concerned about the dilapidated state of the education system, which in their view has produced a generation of young people without the capacity to appreciate and maintain cultural heritage values.

1.7.10 Larihairu Village

Six clans are resident at Larihairu; representatives from four clans took part in consultations. Oral traditions trace an ancestral migration commencing from Kerapai in the Eastern Highlands. From Kerapai people moved to the headwaters of the Purari River and travelled south stopping at Wabo, Subu and Poroi along the way. They then relocated to Maiaro village in the hills that today

overlook the coastal lowlands in Orokolo Bay (a village called Maiaro is also mentioned in the Kaivukavu ancestral sequence). At that time, coastal beaches followed the base of the hills and Maiaro overlooked the sea. The Maiaro ancestral village site is described as located near the Ihu Digicel tower. When ancestors lived at Maiaro, land was forming at the base of the hills and people followed the moving coastline to Heve. The coast continued moving to the south and people eventually left Heve with the 'Muros' moving to the north and the 'Orokolos' moving to the south. While people lived at Heve sand bars were forming near Popo. All Orokolo clans lived at Popo until social tensions culminated in a giant being killed by a coconut thrown from a tree; the killing of the giant was the key event that led to Orokolo clans dispersing along the coast. After leaving Popo, Larihairu clans moved frequently from place to place as shifting swamplands made it impossible to stay anywhere for very long.

Informants have no knowledge of traditional spirit, ritual or sacred places on their clan lands and oral traditions detailing spiritual activities are no longer maintained. However, informants did point out that although spirits are hidden today, they still exist. Intangible cultural heritage values in song, dance and forms of traditional dress are no longer maintained. Ancestral knowledge is maintained for making the tools and materials used for hunting, fishing and manufacturing sago. Rituals are used when hunting and fishing as well as to improve yields from processing sago. Traditional medicines are important to the community and are considered to be more effective than western medicines. Informants reported finding pottery sherds "everywhere" in gardens north of Larihairu and inland to the base of the hills and attributed these to have come from their ancestors.

Orokolo Villages: East Orokolo Bay

1.7.11 Mareke Village

Mareke village has eight resident clans; representatives from three clans took part in consultations. Oral traditions recall ancestral migrations commencing from highlands to the north, traversing the headwaters of the Purari River, and tracking the prograding coastline to the south. The founding ancestral village in the highlands is called Ma Poi, from Ma Poi ancestors moved to: Miro, Evaro, Hevei, Ikava, Heve and Popo. Ancestral stories are not part of general community discourse and ancestral oral traditions are known only to men. Traditional spiritual values are considered to be inconsistent with Christian values and have been largely abandoned. However, a sacred stone buried at Evaro village north of Mareke was deemed worthy of special mention although no details were provided about the sites location. Pottery sherds and stone tools are regularly found in gardens but little importance is attached to these finds. Ancestral heirlooms such as shell valuables remain important to the community and are used as part of bride price.

Intangible cultural heritage values are maintained in song and dance, and women wear traditional dress on special occasions. Knowledge about traditional medicines is important to the community. Traditional hunting tools are no longer made and hunting is of minor importance. Subsistence activities concentrate on sago production and fishing. Traditional knowledge of how to make the materials and tools used for processing sago, and rituals used to enhance yields are passed from mother to daughter. Nylon fishing nets are considered a more effective alternative to woven nets, which are no longer made. Fishing rituals are maintained and are important to ensuring good catches.

1.7.12 Kavava Village

There are nine resident clans at Kavava village; representatives from three clans took part in consultations. Oral traditions recall an ancestral history commencing at a time when there were two parallel worlds: one where it was always day and one where it was always night. Spirit beings named Lavi (day) and Maia (night) came together in the Vailala headwaters and days and nights became one. At that time ancestors lived at Hepea which is today on the banks of the Vailala River some 60 km up stream. Lavi and Maia pushed the coast southward and ancestral clans moved from place to place preferring to stay close to the coastline. Oma village located near Ihu to the east of Kavava was cited as an important village in the migration sequence. The migration is viewed as analogous to that of the lost tribes of Israel as told in the Bible. At a community level, there is tension between traditional and biblical values and possibly as a consequence, discussions about oral traditions detailing the ancestral migration were curtailed. Much of the detail about ancestral migrations maintained in oral traditions is known by a few old men, and their knowledge is not being passed down to younger generations. Pottery sherds are found in gardens but are thought to be unimportant because people do not know who the pottery belonged to.

Heve and Popo are important locations in the Kavava ancestral migration story. Heve is known as the site of the 'Tower of Babel'. According to oral tradition, when the Tower of Babel fell, people's language changed and they found that they could no longer understand each other. As a consequence of these linguistic shifts clans living at Heve broke up and went separate ways. Reference to the fall of Babel from the Old Testament demonstrates that Christian themes are now part of oral traditions.

Informants said that there has been a decline in the use of Orokolo language as Hiri Motu and now Tok Pisin are increasingly being used. There are no traditional spirit sites maintained by the community. Traditional song and dance has not been practiced for more than 60 years and knowledge of traditional forms of dress is known only to a few older women. Intangible cultural heritage values are maintained in the knowledge used for making the tools and materials used for processing sago and rituals are used to enhance yields from sago processing. Knowledge about making tools for hunting and fishing is fading although hunting and fishing rituals are maintained.

Cultural values incorporating traditional and biblical themes are highly valued by the community and the melding of traditional and biblical values is viewed as culturally progressive. Much of the traditional knowledge that remains today resides in the memories of just a few old men. Informants cite the declining use of Orokolo language, inter-marriage outside Orokolo Bay, and a poorly resourced education system as major challenges to maintaining their cultural heritage values.

1.7.13 Herakela and Lariau Villages

The two resident clans from Herakela and two from Lariau chose to come together to discuss cultural heritage matters; all four clans were represented during consultations. Herakela and Lariau share oral traditions that recall ancestors moving toward the coast commencing from an ancestral village in the headwaters of the Purari River. Heve and Popo are the only ancestral locations that were named during consultations. Informants explained that Heve and Popo are important because material artefacts that belonged to their ancestors are found at both locations. Heve and Popo are also spirit sites however; oral traditions detailing spiritual significances of these two sites are confidential and were not divulged. Ape Ohoro is a spirit site also known through oral traditions; villagers recently cleared a part of Ape Ohoro for gardening purposes and

saw a coloured flame coming from the ground confirming a spiritual presence. Villagers have not been back there since seeing the flame. Ape Ohoro is half a day's walk inland from the coast further enquires about the site were unable to produce a more detailed description of its location. Cemeteries close to the village dating from the Christian period are highly important ancestral places. There are tensions between traditional and Christian views and informants diplomatically avoided discussing traditional spiritual values. Villagers no longer have any ancestral heirlooms.

Informants emphasised the importance of Orokolo language for maintaining their cultural heritage values. Men and women take part in traditional song and dance but the importance of these values is declining and song and dance may not be performed in the future. Traditional forms of dress are no longer used. Intangible cultural heritage values are maintained in knowledge used for making the tools and materials used for processing sago and rituals are performed to increase sago yields. Traditional tools used for hunting are rarely used but the weaving skills used to make fishing nets and construct fish traps are taught to girls. Rituals are used to enhance returns from hunting and fishing. Traditional medicines are preferred and people only go to the aid post if they don't get better.

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