Community-level leadership and
development outcomes in rural
Papua New Guinea: evidence
from three case study regions

By

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Doctor of Philosophy
of the Australian National University

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Candidate's Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge, it contains no material previously published or written by another person, except where due reference is made in the text.

Francis Baindu Essaçu

Date: 4th December, 2015
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It is also fitting that this thesis be dedicated to my children who have been inspirations throughout. This thesis is dedicated to Gimale, Robin, Franchelle and Latainiu’ui as an example to them that a PhD is within their reach and the study’s subject of leadership is an inspiration to
them. I hope my achievement will make a difference in their future endeavours and in the lives of many rural Papua New Guineans.

To you all I say, *maule, yawo na boina tuna* [thank you true].
Abstract

Community-level leadership is fundamental to the achievement of natural resource-based development outcomes in rural communities in Papua New Guinea (PNG), as it plays an important role in bridging modern and traditional economies and modes of leadership. Rural communities and the national government seek development outcomes that maximise community-level prosperity and stability. However, there are frequently disjuncts between the potential for development to benefit local communities and those that they actually receive. Whilst there is some evidence that community leadership, itself a contested concept in PNG, can be a strong factor in determining outcomes for communities impacted by development projects, the role of community leadership in this context in PNG has been little studied. This thesis seeks to address that gap by investigating the research question: Are there forms of community-level leadership that enhance livelihood outcomes in the context of natural resource-based development in PNG rural communities? Subsidiary research questions investigated livelihood assets, strategies, and outcomes; institutional structures and leadership styles; and their relationship to the development outcomes of prosperity and stability.

The study is based on a conceptual framework that draws on the established Social Ecological Systems and Sustainable Livelihoods frameworks, and on a hybrid model of leadership appropriate to PNG. A case study approach across three provinces of PNG was used to investigate the research questions. The three case studies represent the three dominant forms of resource based development in PNG — forestry in East Sepik Province, agriculture in East New Britain Province, and mining in the Western Province. Household interviews, community meetings, and participant observation provided the primary data.

The intended development outcomes of community prosperity and stability varied across the case study regions, as did the dominant forms of community leadership. The East Sepik Province communities, which had not yet experienced development impacts, were dominated by traditional modes of leadership, and had high levels of stability but low levels of prosperity. Development outcomes in the Western Province communities were the converse, and modern modes of leadership were dominant there. In East New Britain Province, development outcomes were moderate in terms of both stability and prosperity, and community leadership drew strongly from both traditional and modern modes.

If community leadership in PNG is to deliver both prosperity and stability, it should draw from both existing traditional and modern structures, while fostering positive synergies between leadership modes and natural resources development outcomes. Strengthening the leadership capacity of communities, including through facilitating effective hybrid forms of leadership, will strengthen the prospects for community leadership that delivers higher levels of both prosperity and stability from natural resource development in PNG.
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<th>Definition</th>
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<tr>
<td>ACIAR</td>
<td>Australian Center for International Agriculture Research</td>
</tr>
<tr>
<td>ANU</td>
<td>Australia National University</td>
</tr>
<tr>
<td>CBNRM</td>
<td>Community Based Natural Resource Management</td>
</tr>
<tr>
<td>CBO</td>
<td>Community Based Organization</td>
</tr>
<tr>
<td>CL</td>
<td>Community Leadership</td>
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<td>CMCA</td>
<td>Community Mine Continuation Agreement</td>
</tr>
<tr>
<td>CR</td>
<td>Community Relations</td>
</tr>
<tr>
<td>DMPG</td>
<td>Department of Mining Policy and GeoHazard</td>
</tr>
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<td>ENBP</td>
<td>East New Britain Province</td>
</tr>
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<td>ENBPG</td>
<td>East New Britain Provincial Government</td>
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<tr>
<td>ESP</td>
<td>East Sepik Province</td>
</tr>
<tr>
<td>ESPG</td>
<td>East Sepik Provincial Government</td>
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<tr>
<td>GoPNG</td>
<td>Government of Papua New Guinea</td>
</tr>
<tr>
<td>DFID</td>
<td>Department for International Development</td>
</tr>
<tr>
<td>ILG</td>
<td>Incorporated Land Groups</td>
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<td>KOPDP</td>
<td>Kairak Oil Palm Development Project</td>
</tr>
<tr>
<td>LLG</td>
<td>Local Level Government</td>
</tr>
<tr>
<td>LOA</td>
<td>Land Owner Association</td>
</tr>
<tr>
<td>LTF</td>
<td>Local Trust Foundations</td>
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<tr>
<td>MRA</td>
<td>Mineral Resource Authority</td>
</tr>
<tr>
<td>NARI</td>
<td>National Agriculture Research Institute</td>
</tr>
<tr>
<td>NRD</td>
<td>Natural Resource Development</td>
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<td>New Resource Development Institution</td>
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<td>NSIADP</td>
<td>Nungwaia Sengo Agroforestry Integrated Development Project</td>
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<tr>
<td>OTML</td>
<td>Ok Tedi Mining Limited</td>
</tr>
<tr>
<td>PG</td>
<td>Provincial Government</td>
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<td>Western Province</td>
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## Local terms and their definitions

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<th><strong>Local terms</strong></th>
<th><strong>Definitions</strong></th>
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<tr>
<td>PNG Tok Pisin</td>
<td></td>
</tr>
<tr>
<td>Bikpisisn</td>
<td>big bird</td>
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<tr>
<td>Community</td>
<td>rural people</td>
</tr>
<tr>
<td>Hauslain</td>
<td>relatives from the same tribe, region or group</td>
</tr>
<tr>
<td>Kina</td>
<td>local currency used as legal tender in PNG</td>
</tr>
<tr>
<td>Pasinman</td>
<td>someone who shares wealth with others</td>
</tr>
<tr>
<td>Saveman</td>
<td>individuals with highest qualification</td>
</tr>
<tr>
<td>Smolpisin</td>
<td>small bird</td>
</tr>
<tr>
<td>Tenkii</td>
<td>thank you</td>
</tr>
<tr>
<td>Tok Pisin</td>
<td>PNG common language</td>
</tr>
<tr>
<td>Wanbel istap</td>
<td>common understanding</td>
</tr>
<tr>
<td>Wantok</td>
<td>same language/relative</td>
</tr>
<tr>
<td>Kaukau</td>
<td>sweet potato</td>
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<tr>
<td>Pasin</td>
<td>way or behaviours</td>
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**Western Province**

<table>
<thead>
<tr>
<th><strong>Definitions</strong></th>
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<tbody>
<tr>
<td>tribal/language group</td>
<td>Awin</td>
</tr>
<tr>
<td>language group</td>
<td>Wopkaimin (Kaulmin)</td>
</tr>
<tr>
<td>thank you</td>
<td>Yawo</td>
</tr>
<tr>
<td>People from Wopkaimin</td>
<td>Min</td>
</tr>
</tbody>
</table>

**East New Britain Province**

<table>
<thead>
<tr>
<th><strong>Definitions</strong></th>
<th><strong>Local terms</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>council day for community work</td>
<td>Mande kivung</td>
</tr>
<tr>
<td>Tolai traditional Elder</td>
<td>Ngala</td>
</tr>
<tr>
<td>female ancestors</td>
<td>ngalangala/patuana</td>
</tr>
<tr>
<td>Tolai traditional currency</td>
<td>Param</td>
</tr>
<tr>
<td>also refer to as respondents or interviewees</td>
<td>Participants</td>
</tr>
<tr>
<td>third clan in Kairak</td>
<td>Sukparmatka</td>
</tr>
<tr>
<td>communities having turn to contribute items/money on monthly basis to relatives</td>
<td>Sande-Sande</td>
</tr>
<tr>
<td>shell money - traditionally accepted in Tolai society</td>
<td>Tabu</td>
</tr>
<tr>
<td>auction of traditional items between relatives - way of making contribution</td>
<td>Tiptip</td>
</tr>
<tr>
<td>traditional mask</td>
<td>Tumbuan</td>
</tr>
<tr>
<td>refers a clan</td>
<td>Vunatarai</td>
</tr>
<tr>
<td>settlers/migrants</td>
<td>Wairas</td>
</tr>
<tr>
<td>mediation</td>
<td>Varkurai</td>
</tr>
<tr>
<td>festival</td>
<td>warwagira</td>
</tr>
<tr>
<td>traditional elder</td>
<td>Lualua</td>
</tr>
<tr>
<td>general community meeting</td>
<td>Laen</td>
</tr>
<tr>
<td>clan gathering</td>
<td>kivung</td>
</tr>
<tr>
<td>second clan in Kairak</td>
<td>Kopki</td>
</tr>
<tr>
<td>tribe of Baining</td>
<td>Kairak</td>
</tr>
<tr>
<td>female pedigree</td>
<td>Kadia aumana</td>
</tr>
<tr>
<td>Thank you true</td>
<td>boi na tuna</td>
</tr>
<tr>
<td>Term</td>
<td>Translation/Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Barniuruna</td>
<td>Other relatives making decisions in a matrilineal society</td>
</tr>
<tr>
<td>Avir</td>
<td>One of the clan of Kairak</td>
</tr>
<tr>
<td>East Sepik Province</td>
<td></td>
</tr>
<tr>
<td>Wosera-Abelam</td>
<td>a tribal/language group in East Sepik Province</td>
</tr>
<tr>
<td>Akwi-kundi</td>
<td>consensus decision making process</td>
</tr>
<tr>
<td>Amei</td>
<td>open community meeting place</td>
</tr>
<tr>
<td>Api</td>
<td>iconic birds/totem/moieties of individual clans</td>
</tr>
<tr>
<td>Wosera Kuasungua</td>
<td>language group in Wosera</td>
</tr>
<tr>
<td>wakin</td>
<td>ritual ceremonies in Abela society</td>
</tr>
<tr>
<td>takua-kundi</td>
<td>decisions made at household levels</td>
</tr>
<tr>
<td>Maira</td>
<td>Abela cultural secret institutions</td>
</tr>
<tr>
<td>Maule</td>
<td>thank you true</td>
</tr>
<tr>
<td>Korambu</td>
<td>men's decision making house</td>
</tr>
<tr>
<td>Kuia-kundi</td>
<td>word of invitation to attend traditional feasts and ceremonies</td>
</tr>
<tr>
<td>Kundi</td>
<td>language or a dialect</td>
</tr>
<tr>
<td>Kasaki</td>
<td>yam festival</td>
</tr>
<tr>
<td>Du-kundi</td>
<td>men's talk only or decisions made at higher levels</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

1.1 Why this study?

Papua New Guinea (PNG) is a resource-rich developing nation with abundant natural resources and a relatively small population of 7.5 million people (GoPNG 2011). The country is globally distinctive in many respects. It has very high levels of biological and cultural diversity, reflecting in part its geography (Kocher-Schmid 1998; Bourke & Hardwood 2009; Munks and Watling 2013). PNG’s customary land tenure systems are enshrined in the 1975 National Constitution, providing customary landowners with full rights over their traditional lands and natural resources, although these may be mediated in practice by government. PNG’s economy is almost completely founded on natural resource-based development, which in turn depends on agreements between developers and customary landowners to access land and resources. Correspondingly, customary landowners have expectations about the development outcomes that will result from allowing such access.

This thesis is about community-level leadership in PNG, and the relationship between such leadership and the outcomes from natural resource-based development projects. In this context, ‘community-level’ (hereafter abbreviated to “community”) refers that in rural village communities, which remain the focus of life and decision-making for some 85% of Papua New Guineans (ADB 2008, 2010). Community leadership is important because of two central roles it plays in the contemporary PNG context. The first is the role of community leadership in linking the traditional and modern communities and economies (Rivers 1999; Ambang 2007). Amongst other functions, effective community leadership helps in improving service delivery to communities (Ambang 2007), and in improving community livelihood support systems; at the same time, it helps to facilitate decentralization of the centralized decision-making processes at the national and provincial levels to village communities (Randle & Dhillon 2004). The second role of community leadership is that, from a traditional perspective, it assumes the role of the court system, and manages disputes and conflicts within the community, and restores and reconstructs communities in times of inter-state or inter-tribal crises (Regan 1999; White 2006; Banks 2008). For example, Melanesian communities (e.g. the Bougainvilleans) look to traditional chiefs to provide leadership and rebuild the society in times of civil crises (Regan 1999; White 2006). In these senses, community leadership works to narrow the gap between the traditional and modern leadership contexts. In PNG as elsewhere (Agrawal 2008; Ostrom 2009), community leadership is important because, at local community levels. it enhances community engagement and participation in decision-making processes.

In the resource development context in PNG, community leadership plays a central role in representing communities’ (landowners’) views to developers and governments, and communicating
information relating to development processes to the communities. Thus, communities impacted by
developments are pressuring their political representatives and businesses to recognize the importance
of community leadership in their business and development strategies. This is especially so in the
natural resources sector in PNG because of this sector’s perceived impacts on all aspects of people’s
lives, especially the communities directly affected by resource-based development (Filer 2004; 1989;
Kepore and Imbun 2011); there is strong pressure on the companies responsible for these
developments to ensure that the livelihoods of the affected communities are improved (Kepore and
Imbun 2011).

However, there are various perspectives on concepts of community leadership in PNG. Many define it
as a traditional or tribal decision-making process (e.g. Zimmer-Tamakoshi 1997; McKeown 2001;
Ambang 2007; Prideaux 2007; Yadav 2009), that is concerned with and determined by customs and
traditions. Others (e.g. Littrell 2002; 2005; Dubrin and Dalglish 2003; Hogan 2004; Julien et al 2010;
and Richie 2010) see it more from a modern macro-level perspective connected with controversies
and dynamics of challenges in politics, economic and development arenas. More recently, some
scholars (e.g Martin 2013; Anderson 2015) interpret community leadership more through a
livelihoods lens; Martin’s analysis of customs and conflicts in a rural PNG village, and Anderson’s
enquiry into the economics of customary land and livelihoods in a number of PNG rural communities,
investigated relationships between leadership and livelihoods outcomes.

Nor is there consensus about the most appropriate models of community leadership in PNG. In
addressing this issue, I have – as discussed in Chapters 2 and 3 – sought to draw on both general
models of leadership and those discussed specifically in PNG and Melanesian contexts. For example,
the general Situational Leadership Model proposed by Hersey et al (1996) can be applied to the PNG
context; more recently, Martin (2013) has explored leadership in the PNG context in his analysis of
the “bigshot” and “bigman” systems, and Joseph (2015) has explored values-based and
transformational leadership in the South Pacific context. My research draws from this prior work, and
is based also on the observation, from my and others’ experience, that community-level leadership in
PNG takes a variety of forms, and appropriate leadership should be able to help to improve the
outcomes for communities from natural resource-based development.

This research is based on the commonly-observed disjunct in PNG between the potential for
development to benefit local communities and those that they actually receive. This gap is especially
marked in rural PNG (Filer 1989; Kepore and Imbun 2011; Banks 2008; Martin 2013; Anderson
2015). My research therefore addresses the overarching research question: Are there forms of
community level leadership that enhance livelihood outcomes in the context of natural resource-based
developments in PNG? I investigated this question by developing a conceptual framework for this study that integrated models of leadership, livelihoods, and social-ecological systems.

The thesis investigated the research question through a case study approach in three provinces of PNG, subject to different levels of natural resource-based development. The case studies were based around the planned Nungwaia-Sengo Integrated Agroforestry Project (NSIADP) in East Sepik Province (ESP), the new Kairak Oil Palm Development Project (KOPDP) in East New Britain Province (ENBP), and the long-established Ok Tedi Mining Limited (OTML) development in Western Province (WP). Three local communities in each case study region were the focus of field research. The three case studies represent the three dominant forms of resource-based development in PNG - forestry in ESP, agriculture in EBNP, and mining in WP.

Field research between July 2011 and October 2012 investigated leadership modes, institutional structures, a range of livelihoods parameters, and development outcomes in these case study communities. Primary data were collected through 132 household interviews, nine focus group meetings, and participant observations in the nine communities across the three case study regions. Data were also gathered from personal communications with local and regional leaders and resource owners, and complemented by secondary published and unpublished sources. The results from the study are presented and discussed in Chapters 5 and 6, and conclusions drawn in Chapters 7 and 8.

This chapter introduces the thesis and research questions, and outlines the thesis structure.

1.2 Context of the study

Because of PNG's natural resource development boom, variously in the forestry, minerals petroleum sectors since the 1980s, some observers have described PNG as 'a mountain of gold floating on a sea of oil' (Kwuimb 2010). The nation is continuing to experience significant and growing international investment in the development of its natural resources, agricultural and plantation sectors (Banks 2003; AusAID 2006; Bourke and Harwood 2009). The economy of PNG relies heavily on the sale of its natural resources, particularly mineral deposits, oil and natural gas, and forests, agriculture and fisheries (White 2006; World Bank 2010; Banks 2008). The average 7% annual growth in Gross Domestic Product (GDP) over the last decade, as shown in Figure 1.1, can be largely attributed to the exploitation of PNG's natural resources.
Figure 1.1: PNG GDP Annual Growth Rate, 2005–2014.

Source: GoPNG (2014)

Figure 1.1 indicates a trend of generally increasing annual growth in GDP over the past decade. In part, this steady growth reflects increased in the price of minerals such as copper and associated increased mineral sector activities (Barker 2010; Filer et al. 2012). In addition, Polye (2014) notes that the country’s unprecedented economic growth also reflects the rebound in growth in agriculture, forestry and fisheries sectors. This growth rate was projected to continue beyond with 2014 with the first PNG Liquefied Natural Gas (LNG) production and sale anticipated in the near future (GoPNG 2010; Barker 2012).

However, this general pattern masks some fluctuations in economic growth performance. Figure 1.2 shows the growth rate fluctuations over the last decade, indicating a triennial downturn in growth. The variations in the growth rate over this period reflect, among other things, the slow growth from the mining sector, the contraction in the construction sector due to completion of the LNG project construction phase, and the slow to moderate growth in the oil and gas, manufacturing, wholesale and trade sectors (Polye 2014).
The resources sectors (mining, forestry, agriculture and fisheries) are the major contributors to PNG economy. Figure 1.3 illustrates the sectoral contributions to GDP for the period 2005–2014 (GoPNG, 2014). Notwithstanding the significance of the mining and oil and gas sectors, the agriculture, forestry and fisheries sector remains of predominant importance. Natural resource-based development in PNG is the primary vehicle for creating employment, improving rural livelihoods, and providing government with revenue to deliver services to its citizens. As a result of resource developments, the country has continued to experienced unprecedented and sustained economic growth since independence in 1975 (AusAID 2006; Barker 2010; Bakani 2011; Filer et al 2012).
Given such sustained growth, conventional wisdom and modernisation theories suggest that natural resource-based development should be leading to the development of the country as a whole (Kwuimb 2010). Yet there is a great paradox, in PNG as elsewhere, when the conventional indicators of economic wealth are compared to those of social wellbeing, it is apparent that economic benefits from the extraction of its rich natural resources are not reaching the rural people of PNG, particularly the landowners of these natural resources (Auty 1993; Sachs and Warner 2001).

This was expressed clearly by AusAID (2004: p. ix):
PNG is in a serious social and economic crisis. Overall living conditions are worsening, the population is increasing rapidly, the resource base has been depleted, income earning opportunities are decreasing, access to services and transport infrastructure is declining, the infrastructure itself is deteriorating and effective government support is sporadic. The crisis has built up over the period since the nation attained its independence in 1975.

The United Nations Development Program’s (UNDP) Annual Human Development Indicators (HDI) report similarly indicate that PNG is regarded as one of the ‘very poor’ countries in the world. Its social and economic ranking compared to other nations are presented in Table 1.1; PNG’s overall ranking in the 2014 HDI is 137 of 177.

Table 1.1: PNG’s social and economic ranking.

<table>
<thead>
<tr>
<th>Human Development Index (HDI) Value 2013</th>
<th>Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall position</td>
<td>157 out of 187</td>
</tr>
<tr>
<td>Life Expectancy (62.4%)</td>
<td>157 out of 187</td>
</tr>
<tr>
<td>School Enrolments (no data for 2013)</td>
<td>41% of total population (for 2005)</td>
</tr>
<tr>
<td>GDP (A2.382) or</td>
<td>116/187</td>
</tr>
<tr>
<td>Human Poverty</td>
<td>78/103</td>
</tr>
<tr>
<td>Women Capacity Building</td>
<td>134/148</td>
</tr>
<tr>
<td>Population Growth Rate (2.4%), 2010</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Adopted from UNDP (2014)

The general situation that is emerging in PNG has been described in the terms summarized in Box 1.1 for development outcomes to benefit the majority of Papua New Guineans, particularly the majority living in rural communities.
Box 1.1. Commentaries on the state of development in PNG

For most Papua New Guineans, living conditions have barely improved since independence. Windfalls from mining revenues and generous levels of international aid have subsidized a small political and bureaucratic elites and community leaders at the expenses of investments in roads, education, and health. Deficit financing and government borrowing for unproductive spending have left little money for key state institutions such as police, legal system and the armed forces. Violent crime rates are increasing, law and order have largely broken down, and PNG cannot effectively monitor and defend its land and sea borders.

Population growth is high but economic growth is negligible; job creation is totally inadequate. The buildup of unemployed young people, particularly in the urban areas, leads to demoralization, social breakdown, escalating crime and civil unrest. The extent of lawlessness scares off investors and tourists, and reinforces a downward spiral whereby no jobs are created and law and order get worse.

This decline is accelerating. In the past, PNG has muddled through, despite grim economic conditions and a dire prognosis, because people could fall back on subsistence farming and local markets to survive. But this social safety net now appears to be disintegrating under the impact of crime, which has spread to rural villages. The resulting hardship is taking its toll on traditional village life, stimulating rural-urban drift.

The judiciary lacks independence and well-defined framework. Corruption is prevalence, and nepotism undermines effective governance. An externally oriented commodity sector has taken advantage of low tariffs and the lack of non-tariff barriers. However, new investments require government approval, and an undeveloped financial sector limits domestically funded capital formation.

Sources: Extracted from Manning 2003; Barker 2009; AusAID 2010; DFAT; 2014; PNGSDP 2010; World Bank 2010; UNDP 2014.

The principal reasons advanced for the persistent paradoxes of poor human and infrastructure development in the face of such resource-based development include diverse traditional cultures, poor social infrastructure systems, inappropriate public sector systems, remote geographical conditions (AusAID 2006; Bourke and Harwood 2009; O'Keefe 2009) and the conflicting value systems between modern and traditional communities (Rivers 1999; Ambang 2007). In addition, there has
been a failing national political system, weak institutions and inappropriate institutional structures (Kulwaum 1985; Duncan 2009; O'Keefe 2009). One of the consistent themes in critiques of development in PNG is that the failure of leadership, at all levels, has contributed significantly to the lack of development from natural resource industries (Kulwaum 1985; Tivinarlik and Wanat 2006; Ambang 2007; Prideaux and Beg 2007).

Given that over 85% of Papua New Guineans still live in rural communities in which ‘traditional’ institutions remain important (AusAID 2006; Bourke and Harwood 2009; ADB 2010), this research focuses on ‘local’, community-level, leadership. Community leaders play important roles when decisions about resource use, and decisions about the best way to share the benefits of development – e.g. through the distribution of royalties earned through resource development enterprises – are made. Thus, rural community leaders in PNG are confronted with many issues fundamental to development and its outcomes, as outlined in the research problem statement in the next section.

### 1.3 Research problem statement

Advocates of community-level leadership assume that, under the right conditions, benefits arising from resource development will be sufficiently well managed and distributed (Yadav 2009). However, many studies in PNG (e.g. Ambang 2007) and more generally (e.g. Franches 1999; Gillingham 2001) show that this is not straightforward. There are many projects that do not succeed even when community leadership is emphasised (Yadav 2009). This situation highlights the need to examine the factors underlying the organisation of the community level institutions and groups, and their potential to affect approaches to leadership and decision-making. While many studies have examined community leadership relating to resource management and conservation in many spheres, both in PNG and elsewhere (Twyman 2000; Warner 2000; Yadav 2009; Koim 2013; Namarong 2013), knowledge of the attributes and effects of community leadership processes in natural resource development contexts in PNG remains limited. This study aims to fill this gap.

### 1.4 Research objectives and questions

#### 1.4.1 Research objectives

The overall objective of the study is to understand different modes of community-level leadership in PNG, how they function in different resource development contexts, and what the implications of those modes are on ‘development outcomes’ at the community level. Understanding of these issues has the potential to guide community members, investors, government and other relevant stakeholders
achieve better outcomes from development for local communities. To achieve the overall objective, the following two subsidiary objectives have been developed, to:

1. understand how PNG rural communities make resource development decisions, and the role of community leaders in this process; and,
2. describe how the interactions between different components of traditional and modern communities and economies influence leadership and decisions.

1.4.2 Research questions

To achieve these objectives, the study asked the following primary research question:

Are there forms of community level leadership that enhance livelihood outcomes in the context of natural resource based development projects in PNG?

The primary research question was investigated by exploring three subsidiary research questions:

1. What are the livelihood assets, strategies, and outcomes, and the institutional structures and leadership styles, evident in the communities in the three case studies?
2. What are the effects of these on the development outcomes of stability and prosperity?
3. What are the implications for local and other level institutions and actors seeking to facilitate development?

1.5 Research framework, approach and methodology

The research conducted for this thesis is grounded in a theoretical framework which draws from established frameworks for socio-ecological systems (Ostrom 2009), sustainable livelihoods (DFID 1999), and hybrid leadership models (Fiedler 1976; Hersey et al. 1996; Martin 2013; Joseph 2015). These frameworks are presented and discussed in Chapter 2. The conceptual framework and research design for the study is described in Chapter 3. A case study approach (Yin 2003), spanning the most significant resource development sectors in PNG - agriculture, forestry and mining (Figure 1.3) – was adopted. Cases, and the rationale for their adoption, are described in Chapter 4.
1.6 Structure of the thesis

Seven chapters other than this Introduction comprise the thesis.

Chapter 2 provides a critical review of the relevant theoretical literature and conceptual frameworks used in this research. It focuses on community leadership, governance, leadership systems, natural resource development and management, link between community leadership, risks, benefits and specific challenges to effective leadership in this study context.

Chapter 3 describes in detail the methodological procedures used in the research. This includes case study research design, methods and fieldwork procedures used for data collection, fieldwork, methods used for collecting survey data and analysing the data. Chapter 4 is provides the background to each study area and an overview of resource development in the three study regions. It focuses on understanding general characteristics of the study regions, case study projects and their significance, formal management and distributional systems for sharing resources.

Chapters 5 and 6 present the research findings drawn from the three case studies. The results presented in Chapter 5 address the first part of the first research sub-question above, and thus focuses on livelihood assets, strategies, and outcomes evident in the case study communities. Chapter 6 addresses the second part of the first research sub-question above, and thus focuses on leadership modes and models, institutional structures, pathways to leadership roles, decision making approaches, and the implications of these in communities.

Chapter 7 discusses the findings of the research across the case study regions. It responds to the research questions from the study as a whole. Chapter 8 provides conclusions drawn from the thesis findings, limitations and provides recommendations for future research.
Chapter 2: Literature review: community leadership, natural resource-based development, and livelihoods

2.1 Introduction

This chapter reviews literature relevant to community leadership, natural resource development and livelihoods in PNG. It concludes with an introduction of the conceptual frameworks that I identified as the most relevant foundations for my research.

The focus of the review is shaped by the observations, presented in Chapter 1, that there is often – in PNG as well as elsewhere – a disjunct between the potential for local communities to benefit from development, and the benefits they actually receive; and that better development outcomes may be achieved where there is good community-level leadership (Yadav 2009).

2.2 Community leadership

This section provides an overview of the development of community leadership concepts, covering firstly the issue in a global (characteristically Western) sense, and secondly leadership in the particular context of PNG.

2.2.1 Global perspectives on community leadership

The concept of leadership has been widely studied in anthropological literature in the context of political organisations (White 2006; McLeod 2007). McLeod (2007) maintains that ‘anthropologists have long examined the ways in which social groups achieve cohesion in the absence of a centralised state’ (White, 2006; McLeod 2007). Reay (1959) and Bernt (1962) investigated ‘how group (clans and tribes) leaders attained and exercised power, typically within the boundaries of a specific locale’.

In the early literature, typologies of leaders were developed, on the basis of recurring characteristics, to refer to those in positions of power obtained and demonstrated in particular ways (Chowning 1979; McLeod 2007). Today, while the use of such typologies is retained, anthropologists now acknowledge that leadership is fluid, changing and contested; and as such, defying clear categorisation and overlapping across various scholarly typologies (Hofstede 1980; Mosko 1991).
Following Mosko (1991), scholars such as (McLaughlin (1994), Whiteman (1995) Regan (1999) and Yadav (2013) suggest that community leadership has evolved from the dynamics of states in crises. To illustrate this perspective, Regan (1999) and White (2006) maintain that during crises in state governance in many parts of the world, traditional or community leadership re-emerges as an evident alternative to modern leadership approaches, and international interventions seek to recognise and capitalise on traditional modes of authority in rebuilding states structures. Other studies, for example (Barker 1985; Bistha 1991; McLaughlin 1994; Holzknecht 1996; Herdt 2003; Yadav 2013), suggest that communities are composed of social groups and units, including clans, tribes and families, with diverse religious, social and cultural identities, values, behaviours, norms and beliefs that determine power relationships. They argue that community decisions, participation and access to resources and benefits depend on social structures, norms, values and a leader’s behaviour, all of which are inherited from, and evolve across, generation to generation. Over the last three decades, it has also become clear that a “rural” community’s social structure, and its composition and clan configurations, are associated with decision-making and livelihood outcomes achieved from natural resource development and management (Mansuri and Ravo 2004; Ostrom 2007). The relationships between decision-making processes and livelihood outcomes have been explored and described by Mansuri and Ravo (2004) and Ostrom (2007). Local institutions, such as community-based organisations typified by Community Forestry Management groups, carry out their functions through rules, regulations and working practices largely formulated by a small group of decision makers who influence social organisations with regard to the use, management and development of natural resources (Adhikari and Di-Falco 2009).

2.2.2 Defining community leadership

Many authors have explored the meaning of community leadership (Flowers and Waddell, 2004; Randle and Dhillon 2004; Trosper et al. 2008; Yadav 2009; Julien et al. 2010). These studies have attempted to define leadership by identifying and linking related concepts such as community development, community engagement and bottom-up process. While acknowledging these studies, there is limited evidence that suggest community leadership has a well-grounded definition. Other scholars such as Yadav (2009) and Ostrom (2010) attempted to identify relationships between modern and traditional concepts to define community leadership, yet the definitions of ‘community’ in the contemporary world remain unresolved. Many who have discussed community leadership are proponents of such leadership as a bottom-up process in achieving development; they argue that development outcomes for the benefit of the communities cannot be realised until the communities themselves are left to control and participate in the decision making process (e.g. Randle and Dhillon 2004). They also argue that, for example, in ‘conventional’ government systems, ‘community
leadership’ is about councils, both councilors and officers, enabling local communities to steer their own future (Randle and Dhillon 2004). This is neither traditional (bottom-up) nor modern (top-down) leadership, but involves government officers using available assets and resources at their disposal to engage communities in making a difference.

The literature on leadership more generally is largely one in relation to management (Regan 1999; White 2006); in contrast, traditional leadership is not a well-researched concept (Dorfman and Howell 2002; Yukl 2002). Prideaux and Beg (2007) and Ritchie (2012) note that this is particularly the case in developing countries like Papua New Guinea; most research on leadership has been conducted in Western countries (Yukl 2002; Dorfman and Howell 2002). Whilst there are commonalities in leadership principles and approaches across cultures and countries (Dorfman and Howell 2002; Yukl 2002), it can be misleading to apply leadership concepts from particular countries or cultures to a very different cultural contexts (Julien et al. 2010). More recently, some (e.g. Flowers and Waddell 2004; Julien et al. 2010) have argued that the term leadership can be considered from strongly contrasting, perhaps even conflicting, point of views, and that may lead to disagreement and uncertainty over the notion of leadership.

2.2.3 PNG perspectives on leadership

In PNG, prior to colonisation, community leadership evolved from culturally-intact societies in Melanesia (Chowning 1979; Narokobi 1983; Kulwaum 1985; Barker 2004; Banks 2008). As societies transitioned from traditional to modern economies, through the process of colonisation and independence, people were required to amalgamate their small clans and tribes into bigger communities. While it was convenient for the colonisers to administer and govern from a centralised unit, this style of centralised governance has caused significant fragmentation of traditional social structures. According to Kulwaum (1985), the process of amalgamation encouraged the state to acquire traditional powers and absorb them into a centralised governance system. This state-centric approach implemented by government stimulated the evolution of a community leadership system as a means of dialogue between the local people and the state.

Traditionally in PNG, the leadership structure at community level is constructed within the social fabric of traditional and customary values as practiced by the tribes, clans and lineages that make up the community (Barker 1985; Holzknecht 1994; White 1997; McKeown 2001; Herdt 2003; Ambang 2007). Thus, leadership in PNG is intrinsically linked with local culture and social structures. This implies that people from one community (and within one community) might have different views and perspectives to those from another community on what makes good leadership, and how their governance systems should work to meet their development needs (Ambang 2007). PNG now
operates primarily under a modern system of governance with its inherent leadership roles (Kulwaum 1985; Ambang 2007). However, there is little understanding in PNG of the governance linkages between modern and traditional leadership systems and their impact on leadership, management and the resource development process (Prideaux 2006; Ambang 2007).

Trompenaar et al. (1997) argue that, in the PNG context, national and regional culture impacts on leadership practices. Consistent with this, Prideaux (2006; 2007) claim that customs, norms and traditions in PNG are complex and diverse, and have a strong impact on leadership practices at all community, regional, organisational and government levels. For example, both patrilineal and matrilineal systems are found PNG. Nearly three quarters of the country are patrilineal societies, with matrilineal structures largely confined to coastal provinces (including East New Britain, New Ireland, Autonomous Region of Bougainville, Milne Bay and parts of West New Britain and Madang). In patrilineal societies, men are the dominant figures in leadership and decision making roles; this generally undermines women from equal representation and participation in decision making processes. Conversely, in matrilineal communities such as the villages in Lihir Island, women are the decision makers with assistance from their men counterparts (Liu, 2010).

Leadership in PNG is largely culturally orientated, embracing traditional beliefs, norms and values (McKeown 2001). Thus, leadership mode is significantly influenced by the leader’s immediate and extended family, clan, tribe and haustoain (relatives/regional groups) (Essacu 2006; Prideaux 2007; Koim 2013). However, there is no single or even widespread culture, embracing a common set of beliefs, values and traditional practices, across all of PNG. The practice of traditions varies from province to province or region to region, and diversity is common within both provinces and regions Prideaux (2007).

In the rural PNG context, people view leaders as those who can provide for their household, work hard and be ready and willing to provide assistance to the needy. They see leaders as people who have material wealth (such as gardens and pigs) and are so better able to assist others. Thus, some authors including McKeown (2001) and Finney (1973) describe such leaders as being a ‘Big Men’.

### 2.2.4 Defining leadership in the contemporary PNG context

The dependency of customary leadership on the social and cultural factors discussed above makes it difficult to define any single model of community-level leadership in a PNG context. There is however agreement amongst scholars, such as Warner (2000), Tivinarlik and Wanat (2006) and Ambang (2007) that community leadership is about – at least in part - enabling communities to realize their preferred development outcomes. Regan (1999) and Haley and May (2007) expressed similar views from their experiences with resource development projects in Southern Highlands and
Bougainville communities, respectively, noting that community leadership is also at the intersection between the traditional and modern communities.

A number of researchers have discussed how various interacting factors frame and shape community leadership in PNG. Bourke and Harwood (2009) and Mulung (2012) both identify community livelihood assets, livelihood strategies, institutional structures and associated environmental factors as significant factors for community leadership; Mulung (2012), in his study of landowner decision-making processes for commercial tree growing in rural PNG, noted that community-level decisions about livelihood outcomes varied across his case study communities. Prideaux (2006), Ambang (2007) and Mulung (2012) each note that, in the PNG context, defining the term ‘leadership’ is difficult, particularly in modern PNG where it is difficult to integrate the perspectives and expectations of different cultures in a variety of modern contexts. Ambang (2007) observes further that there is discomfort in defining leadership in cross-cultural communities, where different views and opinions are evident. Correspondingly, Prideaux (2006) notes that definitions adopted by researchers are often not uniform, that particular definitions can be controversial, and suggests that key terms around ‘leadership’ in PNG should be clearly defined, both to establish the position taken in the study and to facilitate discussion.

A number of studies of ongoing practices of leadership in rural PNG contexts indicates that it is based on a set of largely traditional factors: personal identity, integrity, values, respect, status, and wealth (not in terms of money but land, resources, gardens and pigs) (Essacu 2006; Prideaux 2007; Banks 2008). Generally, one’s origin is significant as it determines an individual’s identity in their society. Their personality reflects their personal qualities, and contributes to the respect they command in the community. Wealth - not necessarily in terms of cash assets, but in terms of other resources such as land, gardens and pigs – may necessary to maintain the respect and standing generated by other means.

However, leadership in contemporary PNG is shifting profoundly to adopt the changing world (Martin, 2013). Martin’s (ibid) observations and descriptions of the ‘death’ of the ‘Big Man’ model of leadership, and the rise of the ‘Big Shot’ model (discussed further in subsequent sections of this Chapter) demonstrate the shifting modes of leadership in PNG. As discussed further in Chapter 2.2.4, Martin suggests that the traditional obligations expected of Big Men to serve their people are overtaken, in the case of the Big Shot, by his pursuit to join the ranks of an emerging socio-economic elite. This example illustrates the dynamic state of community-level leadership in PNG.
2.3 Governance systems and leadership types

In Sections 2.1 and 2.2 above, I discussed the evolution of community leadership. In this section, I examine the related topics of governance and leadership systems in PNG, focusing on three key areas: the governance systems, existing leadership systems, and the barriers to community leadership in PNG.

2.3.1 PNG governance systems

As discussed above, the literature on PNG governance systems identifies both modern and traditional forms of governance and leadership (Narokobi 1980:1983; Kulwaum 1985; Tivinarlik and Wanat 2006). Kulwaum (1985) and Tivinarlik and Wanat (2006) suggest that the ‘modern leadership system’ in PNG refers to governance structures, rules and formalities of appointing leaders based on modern democratic values and principles. In contrast, the traditional governance system is that which operates at a community, typically village, level, and is based on indigenous customary values and social structures (Ambang 2007). Many authors -(e.g. Kulwaum 1985; Tivinarlik and Wanat 2006; Ambang 2007; Prideaux and Beg,2007) - note that the formal governance systems in contemporary PNG communities are based more on modern leadership and governance structures, which the country has adopted since it gained independence in 1975.

Under the contemporary governance systems in PNG, councilors, who are elected by people through formal elections, maintain political leadership status at the local level. Elected councilors are also the agents of government at the local level. They are embedded in PNG’s formal governance system, which has three levels: national, provincial and local. The PNG National Government is the central decision making body, with each of the 22 provincial governments responsible for provincial affairs, and the local government for delivery of basic public services at the community level. At the time of independence, the creation of a three tier system was considered important for promoting the decentralisation of powers from national government to provinces and local communities. It was also considered important for the purposes of development of natural resources in PNG communities, particularly in the dissemination of information and implementation about policies and plans relating to natural resource-based development. However, for many Papua New Guineans, the formal governance structures that emerged from decentralisation did not work. There were numerous political debates and considerable dissatisfaction concerning the form and extent to which decentralisation has been, and should be, implemented, and a general frustration in the country over the failure of the policy of decentralisation (Kulwaum 1985).

As a result, in 1995, a new Organic Law on Provincial and Local Level Governments (LLG), was passed when new Provincial Governors and LLG Presidents were elected replacing the old Premiers
and Provincial Members of the Provincial and LLG (Filer and Sekhran, 1998). Filer and Sekhran note that the replacement of Provincial Premiers saw a reduction in the number of provincial politicians, leaving the national politicians to exercise a new measure of power over provincial affairs, including decisions to manage and develop natural resources. Under this system, the provincial assembly now include ‘a number of elected local council presidents and appointed members, who may now be seen to qualify as ‘provincial politicians in their own right’. Similarly, all local councilors will henceforth be seen as ‘local politicians’, where they were previously more likely to be classified as community leaders’ (Filer and Sekhran 1998). Other scholars (e.g. Haley and May 2007) expressed similar views, viz. that the local leaders, including ward councilors and executives of landowners groups, see themselves as local politicians, particularly in the context of shifting governance systems. This obviously undermines the traditional expression of community leadership.

Since 1995, the national government has formulated numerous reforms in the natural resource sectors. Although the communities are legal custodians of their natural resources decisions on how to develop resources are both manipulated and regulated by the government, and particularly by national politicians. For example, in the recent case of the PNG Liquefied Natural Gas (LNG) project, both the License-Base Agreement (LBA) and Benefit Sharing Agreement (BSA) were implemented at the national government level without consent from landowners. Landowners, through their local community leaders, were invited only to support and formalise the agreement at the signing (Korugl 2009).

What has progressively emerged in in PNG is a formal governance system that has both undermined and disregards community leadership, particularly in relation to natural resource-based development. As many observers have noted of the natural resources sector (for example, Barnett (1990) and (Filer and Sekhran,(1998) for the case of forests; Maru (2002) and Koyama (2009) for petroleum, and Liu (2010) for mining), manipulation and sabotage of lower-level decision process by national politicians is commonplace.

2.3.2 Leadership systems in PNG

This section reviews the different leadership systems that exist in PNG, in the context of the governance systems discussed above. This context is important because leadership facilitates the governance process, but is also mediated by it. Sahlin (1963), Mosko (1973) and Chowning (1979) describe the common types of traditional leadership in PNG as falling into two categories: ‘big-men’ and chieftain systems. The ‘big-men’ system is practiced predominantly in the Highlands region, and in some other parts of mainland of PNG, and the chieftain systems is found especially in the New Guinea Islands, Papua (Southern Region) and some coastal islands of mainland New Guinea.
(Godelier and Strathern 1991; McKeown 2001; White 2006; Ambang 2007). However, the systems of leadership varies greatly between communities (Tivinarlik et al.2006); and the definitions of these leadership system become ambiguous (Zimmer-Tamakoshi, 1997: 108-111; Martin, 2013: 176-186). The following sections outlines these two systems at a general level.

### 2.3.2.1 Big Man system

Sahlin (1963) describes how the success of a ‘Big Man’ depends on his ability to organise important ceremonial events and exchanges of partnership trades and gifts through reciprocal feasts and activities. Zimmer-Tamakoshi (1997) also observed that the status of Big Man is achieved through making good things happen for others as well as for themselves. Zimmer-Tamakoshi (ibid) notes that an important part of the Big Man’s responsibilities is to raise their names with others in their communities by providing assistance to those who are in need - for example, by sharing the surplus of his wealth and assets (to pay for school fees for other children in his community, paying compensation to settle disputes between two rival clans). A Big Man’s involvement in such activities builds his reputation, and acquires respect and commands attention from the community, and at the same time establishes his support-base.

The term Big Man is not only commonly used amongst Papua New Guineans, but has been long the most recognizable figure in Melanesian anthropology (Martin 2103), helping to define ethnographical culture by virtue of his perceived contrast as a leader with Polynesian Chiefs (Sahlin 1963:285). One important characteristic of a Big Man are that he is self-made, and does not inherit or even assume a fixed office, but is constantly having to prove his suitability as an organizer of social relations (Sahlin 1963:289). Ultimately a man becomes Big by extending the number of people who are indebted to him (Gregory 1980:638), and thereby building an army of followers (Sahlin 1963:290-91) who rely on him to organise necessary events such as sponsoring marriages, deaths and compensation payments (Sahlin 1963:292; Martin 2006). These people become potential source of support in the organisation of large exchange relations, such as marking of death of a Big Man of another clan.

A second characteristic of a Big Man is moral ambiguity. This, as Burridge (1975:96) described, means Big Men have to follow a delicate path of their history, carefully following the footsteps of the good/bad things their descendants or history has established. In this sense, Sahlin (1963:292) observed that the accord given to a Big Man by the community to organise activities is through virtue of his own history of respecting the reciprocities of day-to-day village life.
2.3.2.2 Chieftain system

The 'Chieftain' system is characterized by inheritance of powers from male lineages. As explained by Prideaux (2007), the role of chief is to control the resources and activities of the society. The Chief makes decisions for the society according to its existing traditional legal system and advises his chief of councils, who are usually clan leaders, to inform the community. The attainment of the title of Chieftain is through accumulation of wealth by way of ownership of land, pigs, wives, money, or as a wise warrior. For some cultural and social reasons, chieftain titles are accorded only to men; to maintain respect, peace and harmony within the community, its members have to follow the decisions made by the chief (McLeod 2007; Prideaux 2007).

2.3.2.3 Comparing the Big Man and Chieftain systems

The 'Big Man' is flexible, in the sense that the leader relies upon the shifting support of followers belonging to small fragmented groups. The Chieftain System is intrinsically more stable, as power is held within stable hierarchically organised political clans (Sahlins 1963: 288). Sahlins (1963:290-396) and McLeod (2007) described the two leadership systems with the characteristics as presented in Table 2.1.

Table 2.1: Common characteristics of Big Man and Chieftain Leadership

<table>
<thead>
<tr>
<th>Big Man</th>
<th>Chieftain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power is personal</td>
<td>Power resides in the position, not the person,</td>
</tr>
<tr>
<td>Status acquired and maintained through</td>
<td>Authority over permanent groups</td>
</tr>
<tr>
<td>generosity in distribution of wealth</td>
<td>Authority inherited, not achieved</td>
</tr>
<tr>
<td>Influence over fluctuating factions</td>
<td>Status inherited, not achieved</td>
</tr>
<tr>
<td>Status gained through demonstrations of skills (e.g., magic, bravery and oratory)</td>
<td>Authority to call upon the support of others without inducement</td>
</tr>
</tbody>
</table>

Source: Adopted from (Sahlins 1963; McLeod 2007)
2.3.2.4 Bigshot and Grand Chief Leadership

Martin’s (2013) analysis of the customs and conflicts in PNG associated with post-disaster reconstruction development projects led him to coin the term “Big Shot” leadership. The term Big Shot (Martin 2013) refers to commonly-used English slang throughout PNG and elsewhere, and therefore likely to be of expatriate origin. Nevertheless, the word Big Shot has been adopted in recent years, and used deliberately to contrast with the well-established Tok-Pisin term bikman (bigman) see Sahlin (1963).

As Martin (ibid) pointed out, ‘Big Shot’ is an emerging form of leadership in PNG and Melanesia. The ‘Big Shot’ identifies people who see themselves as they have placed themselves outside of their moral obligations to others, and instead behave as business managers of their own. While in many respects, PNG communities have not deviated from their traditional sense of communalism, the changing circumstances allow for some people to take advantage of their opportunities to partially deny basic mutual obligations. In this sense, the Big Shot is now the seen as an undesirable form of modern leadership.

Dorn (2015) noted a parallel model of leadership to Big Shot that he calls liptimapim leadership. In PNG Tok Pisin, ‘liptimapim means’ lift’ and is equivalent to adulatory behavior, almost akin to idolatry and cult worship. An examples of ‘liptimapim’ is the throne-carrying of elected Members of Parliament when they visit local communities (Dorn 2015). This has no precedent in PNG culture. However, it has become a norm in the recent years in the PNG political context. Dorn (2015) observes that a liptimapim approach is used by the traditional communities to initiate elected politicians and bestow them with various traditional titles such as Grand Chief, Chief of Councils, and Chief of various tribes. The emergence of Grand Chief Titles has become both common and contested in the two decades in the PNG political spheres, in terms of who should attain such a title and on what basis. Dorn (2015) points out that, while PNG has a modern Westminster parliament comprising elected politicians from across the nation, this does not mean the position and role of Member of Parliament automatically make them paramount chiefs or holders of other high traditional office. From the perspective of traditional PNG values and expectations, elected politicians are yet to contribute to the society in a more compelling traditional context than simply as an elected politician in the modern Westminster system of government. As Dom (2015) notes, the title of chief and the encompassing role of a leader in PNG communities have a more fundamental basis in society than simply the person who received the most votes.

Those playing Big Shot and Grand Chief roles in contemporary PNG society are also leaders of whom people from their communities have knowledge, a lifetime of experience, and whom they trust. This means the Big Shot and Grand Chiefs have, reciprocally, the moral obligations to speak the right
words, to solve disputes, to create peace and maintain harmony, and to take the right action so that all parties are content; and to take responsibility for the outcomes for communities as a result of their words and deeds (Martin 2013; Dom 2015). The emergence of Big Shot and Grand Chief Models of leadership are indicative of how leadership models in PNG are shifting from more traditional modes to various hybrid forms. For this reason, I focus on hybrid forms of leadership in subsequent sections of this chapter, and the resultant conceptual framework.

### 2.3.2.5 Influences on leadership in PNG

As I discussed in Chapters 1.1 and 2.2, there is no agreed definition of leadership in the contemporary PNG context, and systems of leadership are also changing - in response to cultural, economic, political and social changes in PNG, and those internationally which influence PNG. Therefore, scholars such as Tivinarlik et al. (2006) and Prideaux (2007) argue that there is continued shifting of leadership systems in PNG. As noted previously, the structure of leadership varies greatly between communities (Tivinarlik et al. 2006). Zimmer-Tamakoshi (1997) observed that contemporary leadership has been shaped by a number of key influences in PNG. These include colonisation, Christianity and the Westminster system of government introduced by the colonisers. I discuss each of these below.

**Colonization** has brought many changes to PNG, including political stability, bureaucratic control, economic competition, and uniformity of practice in the public sector. These elements were introduced during PNG's Colonial period in an attempt to embed modern management practices throughout the country. However, these have also led to bureaucratization, resulting in formalised organisational arrangements, appointed leaders and managers, prescriptive duty statements, and a focus on individual effort.

**Christianity** also brought stability and played a vital role in the changing leadership and governance processes in PNG (Barker 1998). Eves (2008) described how churches continue to play a strong role in instilling Christian values and principles to local communities, and so guiding communities to resolve conflicts in more peaceful and harmonious ways. Apart from its primary role in converting people to Christianity, churches have also played major roles in provision of basic services such as education, health and welfare services in communities where government agencies were slow to bring development (Liu 2010). Today, they continue to assist the local people to establish self-help social and economic projects such as plantations, small business and infrastructure (Liu 210). Liu (2010) and Eves (2008) agree that the churches continue to have well-established and extensive influences in PNG.
The Westminster system of representative government was adopted at independence in 1975 from Australia's colonial administration (Kulauwm 1985). Amongst other features, this system centralizes decision making power. However, many scholars (e.g. Narokobi 1983; Kulwaum 1985) have argued that the centralized system of government has failed to deliver basic services to the rural people of PNG. Consequently, the provincial and local level governments were established, aimed at more effectively representing and delivering services to rural communities. Since then, the governance system has been through various restructures and realignments, such as the enactment of Organic Law on Provincial and Local Level Governments, 1996 (see section 2.5).

One of the consequences of how the Westminster system has evolved in PNG is that almost all government decisions are made by senior managers without consultation with their staff; knowledge sharing is restricted; and the value of individual employees is not often recognized. A series of leadership crises have resulted in bankruptcy, political instability, poor service delivery, bribery, and malpractice, such as misappropriation of public funds and wantokism, in both the public and private sectors (Prideaux 2006; 2007; Koim 2013). These elements are now firmly woven into the structure of PNG politics and the bureaucracy (Prideaux 2006). Some of these elements, including the wantok system, are discussed as barriers to leadership in the next section.

2.3.3 Barriers to effective leadership in PNG

It would be evident from the preceding sections that, for a number of reasons, there considerable obstacles to effective leadership in PNG, as Prideaux (2007) discusses. One of the key obstacles is that linked to values conflicts between the diverse cultures of PNG. Scholars such as Tivinarlik and Want (2006), Ambang (2007) and Prideaux (2007) point out that PNG consists of many different races, cultures and regions; and that understanding and giving effect to leadership are complex, particularly in cross-cultural contexts where different views and values are expressed. This argument is consistent with those of Yukl (1994) and Koim (2013) that cultures and traditions are part of the base on which leadership decisions are made. The second obstacle relates to the contrasting leadership models, between Western models adopted from the colonial powers and the traditional models indigenous to the region (Joseph 2015). Western models have been widely adopted into the region, while traditional structures are still dominant in many societies (Kulwaum 1985; Joseph 2015). Although both models have provided ongoing support for governance of the region, both have limitations, which in many ways create an environment for stronger regional leadership (Joseph 2015).

The third barrier to effective leadership is the wantok system (Joseph 2015). Wantok in a Melanesian context means a friend or relative, but in more cultural context refers to group of people who speak same language group; the words 'wan' and 'tok' in PNG Tok Pisin means 'one' and 'talk' in English.
Earlier definitions of *wantok* (eg, Swatridge 1985: 4) characterise *wantok* as ‘‘friendly society’, welfare system, and life-assurance all in one’. MacDonald (1984:4) describes *wantok* as a ‘bond of people with basic, kinship community, speaking the same language, living in the same place, and sharing values’. These descriptions of *wantok* speak to the good relationships and social networking with the communities and Melanesia as whole. However, the *wantok system* is, as Prideaux (2006) and Lamour (2008) argue, often responsible for abuse of patronage in organisations and government, misallocations of resources, and for allegiances formed during disputes. Koim’s (2013) work revealing the growth of *wantokism* system in the PNG bureaucratic systems supports this argument. He observed that the appointment of heads of the government agencies and related government arms were linked to *wantokism*; for example, a particular region is seen to have dominated the decision making structures of the government, and allowed the growth of corruption and misappropriation of public funds, including those from resource development projects. The *wantok* system is now deeply an entrenched culture in PNG communities, governments and bureaucratic governance systems.

The fourth point to note is the lack of integration of traditional leadership in contemporary leadership and governing processes (Ambang 2008). Ambang argues that this lack of integration of indigenous leadership systems into the modern Local Level Government (LLG) structure is a barrier to development in PNG. He suggests that, since clan or tribal leaders are the influential figures at the village level, they should be involved in LLG administrative roles to facilitate development processes. Prideaux (2007) argues that a fifth barrier to effective leadership is the lack of improved infrastructure such as roads and logistics (Prideaux 2007). In a country (PNG) where over eighty percent of the population are rurally-based (Bourke and Hardwood 2009), this means the majority of people have poor access to essential opportunities that arise from, for example, better schools, modern training, and communications technologies. Consequently, the bulk of the population are entrenched to their traditional practices, including those related to leadership. Essacu (2006) also noted number of related barriers to good leadership in PNG, particularly in the context of natural resource based development. These barriers are cultural settings, ethnic and languages diversities, educational qualifications, one-way communication from leaders to communities, lack of empowerment (respect & trust), lack of sharing of information (skills and knowledge), and personal accumulation of wealth and money when in responsible position. Many of these barriers are linked to the remote geographical settings of these communities (Essacu 2006).
2.4 Natural resource-based development and livelihoods in PNG

Natural resources in PNG refer, firstly and most importantly, to customary land; and also to minerals, oil, gas, forests, fisheries and water associated with that customary ownership. These resources are the livelihoods base of rural PNG communities (Anderson 2015). Internationally, natural resource development projects have been directed consciously towards sustainable livelihood outcomes (Ashley 2000), and many studies have shown that appropriate natural resource development is particularly important for rural community livelihoods (Ashley 2000; Tyler 2015). Governments of developing countries have recognised for some decades that the livelihood needs of rural people can be improved by natural resource development activities that focus on the alleviation of poverty through community-based initiatives; these include community forestry, social forestry and joint forest management activities (World Bank 2010; Yadav 2013) and, more recently, the benefits that may flow to communities from Reduced Emissions from Deforestation and Forest Degradation (REDD+) and Payment for Environmental Services (PES) schemes (Newton et al 2015). In the mining sector also, there has been an increasing focus on sustainable community development projects as part of corporate social responsibility initiatives promoted in mine impact regions (Jackson and Peterson 1995; Jackson 2002; Emel et al. 2012; Scambary 2013). More generally, the links between rural community, poverty alleviation and income from natural resources have been recognised by initiatives such as the Millennium Development Goals (MDGs) (Yemiru et al. 2010).

2.4.1 Natural resource development objectives

The objective of PNG’s natural resource development is set with the framework of the Vision 2050 Strategic Development Plan (GoPNG 2009). The Vision 2050 Strategic Development Plan sets the pathway for PNG to be a ‘smart, wise, fair, healthy and happy society’ and one of the top 50 economies in the world by year 2050 (GoPNG 2009). This Vision 2050 is underpinned by seven strategic focus areas, which are referred to as pillars:

1. Human capital development, gender, youth and people empowerment
2. Wealth creation
3. Institutional development and service delivery
4. Security and international relations
5. Environmental sustainability and climate change
6. Spiritual, cultural and community development
7. Strategic planning, integration and control.
The PNG National Government has directed all state agencies to align their individual corporate plans to synchronize or harmonize with the ideals of the PNG Vision 2050.

Pillar number 2 (Wealth creation) calls for sustainable development of the natural resources and the wealth from these resources to be managed and distributed equitably amongst the legitimate landowners and other stakeholders. It is envisaged that, apart from generating revenues for the nation and developers, all resource owning communities should be adequately resourced, and that PNG’s peoples have achieved prosperous and stable societies (GoPNG 2009). Prosperity in this sense it means improve education and health services, improved roads, transport, accessed to markets, access to information and communication and modern training. Stability means that people would experience fewer law and order problems, and communities would be at peace, with fewer conflicts and violence-related issues. As I discuss later, these development objectives of prosperity and stability are fundamental to this study.

Apart from the recent Vision 2050 Strategic Plan Document, PNG has a number of polices and mechanisms designed to give effect to the intent, articulated in its 1975 Constitution, that development of its resources should be for the benefit of all Papua New Guineans. Successive PNG governments have made commitments to ensure the participation of indigenous landowners in decision making process (Kulwaum 1985). To this end, governments have formulated various policies such as the Forest Act 1991 and Forest Regulations 1995, Mining Act 2002 and 2004, and given several government directives for the implementation of forestry and mineral resource development activities through the full participation of local landowners. In order to facilitate landowner participation in the resource development processes, some form of institutional arrangement was required as a means for giving effect to this intent. Consequently, institutional structures were established for landowners to be involved in decisions about development of their natural resources.

These structures were a form of community-based natural resource management organisations. Many of these were institutionalized under Incorporated Land Group (ILG) systems. The establishment of these community-based organisations was designed to promoted equal participation of resource owners in the access to and development of their natural resources (Filer and Sekhran 1998; Imbun 2000; 2006). However, in practice, participation is typically exercised by a few educated elite leaders of the CBNRM and ILG institutions, rather than by members more widely, and the interests of the elite are often favoured over those of the wider community. Although the CBNRM and ILG organisations operate under specific rules and regulations, implementation is commonly distorted by the elite leaders (Kuwimb 2010; Koim 2013; Namarong 2013). In order to understand how the elite leaders behave and influence natural resource development decisions in these institutions, I next examine the links and relationships between community leaders and natural resource development projects.
2.4.2 Livelihoods portfolios in PNG

Livelihoods, as defined by Chambers & Conway (1991) and DIFD (1999), comprise the capabilities of rural populations to enhance their wellbeing. In the PNG context, Anderson (2015) sees livelihoods as peoples' socio-economic capacities that enhance their day-to-day lives in the villages. Following the livelihoods framework developed by DFID (1999), one can identify the most significant livelihoods elements of livelihoods in PNG as the assets of cultures and traditions; social structures and relationships; natural capital resources such as land, forests and minerals; and economic infrastructure such as roads, logistics and markets. Table 2.2 provides an overview of the current livelihoods portfolios in PNG.

Table 2.2: Livelihood portfolios in PNG

<table>
<thead>
<tr>
<th>Livelihood type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture and traditions</td>
<td>Population base is 12% urban, 82% rural (Hunt 2010). Two thirds of the country is dominated by Patrilineal and a third by matrilineal society. Men dominate leadership &amp; decisions in patrilineal societies than women while women are decision makers in matrilineal communities (Prideaux 2006; Liu 2010).</td>
</tr>
<tr>
<td>Social structures, relationships and household composition</td>
<td>Clan and tribal based systems (Ambang 2007) Over 800 languages spoken (means diversities of cultures, norms and beliefs (Waiko 2013). Trades and exchanges occur through reciprocity (Morauta 1983; Joseph 2015) Person/per household - 2 adults &amp; 4-5 children (Anderson 2015)</td>
</tr>
<tr>
<td>Natural capital resources such as land, forests and minerals, oil, gas fisheries</td>
<td>Abundance of resources, most of which are customarily owned (AusAID 2010). Land in particular significance resource of which 97% under customary ownership 3% by state (GoPNG; Filer 2004). Development boom in country (AusAID 2014; World Bank 2014) Various forms of spin off businesses and benefits in the development impact regions (AusAID 2014; UNDP 2014) Contribute to both national (revenue) and rural economy in term of improvements of livelihoods in local communities (AusAID 2014; UNDP 2014). Degradation of forests and environment loss of biodiversity</td>
</tr>
<tr>
<td>Economic systems</td>
<td>Dual systems involving both subsistence (small formal and informal businesses) and modern (large industries) (Hunt 2010) Income/household/year 3,000 to 4,200 PGK rural (Anderson 2015) Families that farm garden and cash crops earn up to PGK16, 000/annum Consumption rate is PGK13, 400/annum rural family (which greater than what they earn) (Anderson 2015) Land lease rent PGK20 to 100/hectare per year (Anderson 2015) Rural lease rent PGK100/annum (Anderson 2015)</td>
</tr>
<tr>
<td>Infrastructure such as roads, logistics and markets</td>
<td>Some areas are progressing with roads, but many face hardship with in inaccessible conditions Markets and logistics are most time inaccessible Communication - Most rural parts have access to personal mobile phones and radios (Digicel &amp; FM stations) while other media out lets are inaccessible</td>
</tr>
<tr>
<td>Development Impediments</td>
<td>Thief/violence, low ability to save and borrow, escalation of law and order issues, inadequate/roads, poor schooling, increase corruption and, unskilled labour (Hunt 2010)</td>
</tr>
</tbody>
</table>

Culture and traditions - Culture is defined as people's social identity, roles, relationships, cultural beliefs, values and norms of recognition in a society (Dodd 1998: 43). Tradition simply is the continuation of the cultures and history of the society, as has occurred over time and is handed down through generations (Lindstorm and White 1994: 5). In that regard, the term tradition is applied in this study as the Papua New Guineans’ beliefs and values that have existed for a long time and are passed down to the younger generation. Consequently, the expression of culture and traditions have a profound significance on how people feel about their culture, and also for the definitive meanings it gives to their lives to pass on from generation to generation.

Social structures and relationships - Linked to cultures and traditions are social structures and organizations that act as resources for individual to gain material wealth and realize their personal interests (Liu, 2010). For example, the existence of clan and tribes systems supports the day-to-day needs and wants of its members for food, shelter, cash and kind contributions for school fees, bride price, and death and compensations payments (Morauta 2002; Mulung 2010). Thus, these are fundamental to the existence of an individual clans, households, families, and tribes.

Natural Capital Resources - these refers to people’s customary land, forests, biodiversity, water and aquatic resources, minerals and petroleum. In the PNG context, Anderson (2015) described natural resources capital, including land, as those assets with the capacity to enhance rural base social and economic options. He particularly emphasized that the development of these resources would provide spin-off businesses and related activities to increase livelihoods. However, Anderson argues that the importance of land and its resources do not receive priority attention from big investors to develop them through a holistic approach. Rather, the economic interest of powerful actors such as governments and large companies are served by appropriating land and associated natural resources, and developing them for their own benefits.

Economic systems- the economic systems in PNG comprise both small- and large- scale components. Although large systems exist, the bulk of the population at the household level is driven by small cash crop framing, subsistence, and the informal sector (Anderson 2015). As noted in Table 2.3, the informal income sector dominates the formal and large industrial wages sector. Nevertheless, the consumption expenditure exceeds the income annual income per household. The land that people own as an economic assets earns a lower return for the customary owners than for ‘modern’ users. Anderson (2015) argues that land has been devalued by the large economic actors (i.e. Government and developers), and could be a greater asset for landowners were there better forms of organization to capitalize on that asset.
Infrastructure such as roads, logistics and markets- Many, such as Prideaux (2006), Hunt (2010), AusAID (2014), and the World Bank (2015) argue that infrastructure and logistical situations in PNG continue to deteriorate, and render parts of the country inaccessible. Although some parts of the country may have seen some improvements in road networks, schools and health services, this has seldom been the case in the remote geographical locations. Access to markets becomes very difficult when people cannot transport their cash crops and garden produce to public markets (Bourke and Harwood 2009).

Development Impediments- (Hunt 210) commented that the potential of improving livelihoods in PNG is hampered by development impediments which are common in PNG. These require attention from all levels of and key actors, society (Governments, NGOs, civil society organisations and businesses) if the constraints they impose on livelihoods are to be addressed.

2.5 Community leadership and natural resource development

This section explores linkages between leadership, natural resources and livelihoods presented above. In particular, it discussed the relationships in the context of natural resource (i.e., oil, gas, forests, marine resources, minerals and land) based development projects.

2.5.1 Leadership related to natural resource development

There is relatively little literature that directly addresses community leadership and natural resource-based development. While community leadership is often mentioned in literature about ‘community participation’ and ‘community development’ in the context of natural resource based development, such mention is often relatively cursory (e.g. Charnley and Poe 2007; Larson and Soto 2008). There are a number of comparative studies relating to the community leadership focus of this study, including those of Ambang (2007), Haley and May (2007), Banks (2008) and Martin (2013). However, what is not clearly articulated in this work is that conflicts in communities are the consequence of decisions made by certain individuals in the communities, usually clan and tribal leaders. These leaders assume community leadership roles to facilitate developments (Ambang 2007; Yadav, 2009).

In the natural resource management context, scholars such as Burkey (1998), Yadav (2009), Ahurra 2011 and Yadav (2013) argue that community leadership is critical, and that it facilitates the participation of poor and disadvantaged communities in the resource development and management
process. In the development context, Dorfman and Howell (2002), Hassan and Silong (2008) Wyatt (2008) and Sorensen and Epps (1996) argue that local-level leadership works with government and other development agencies to deliver community-based outcomes. Recent studies (e.g. Cumbe 2010; Hunt 2010; Julien et al. 2010; Kroehn et al. 2010; Trosper et al. 2008; Yadav 2009) argue that community leadership is an area that requires greater attention in contexts of natural resource access and development. Building on this, others such as Altman (2009) and May (2010) assert that good relationships between community leaders and stakeholders are critical in order to facilitate investment in natural resource development projects. Cumbe (2010) argues that the involvement of local leaders with legitimacy and credibility, in both the traditional and modern social and administrative networks, are the key factors for success in community development projects. Trosper et al. (2008) argue similarly, stating that government officials and community leaders have become increasingly concerned about the lower socio-economic status, community well-being, and generally poorer levels of health of aboriginal communities in Canada because of the poor governance systems and relationships in place at the community level. Ostrom (2011) described the relationship between community leaders, government officials and development as fundamentally important for the success of community-based development projects.

In PNG, natural resource management and development has also been a subject of a number of scholarly critiques. Common criticisms stem of outcomes at the local level focus on the unequal distribution of benefits from the community based natural resource management and development projects. There is a general perception that conflicts in CBNRM projects arise because profits are unevenly shared between and within the communities involved in the projects (Warner 2000). This can happen either because community members were not adequately involved in decision about the development or management processes, despite the mechanisms intended to ensure their involvement, or because the benefits due to them do not reach them in ways or at the level expected. There are numerous examples in PNG of conflicts arising following resource development – for example, Kepore and Imbun (2006) observed the disputes over the distribution of benefits and payment of compensations to the Lower Ok Tedi communities by the Ok Tedi Mining project; the case later ended up the Melbourne Supreme Court in Australia.

Filer and Sekhran (1998) investigated forestry projects based on logging in Hawain (East Sepik Province), Kandrian Gloucester Integrated Development Project, (West New Britain Province) and Makapa (Western Province), and concluded that non-involvement of resource owners in the decision making processes partly contributed to conflicts amongst themselves and developers. They reported that forest owners’ participation is important to enable them make their own decisions, and concluded that all of these projects suffered leadership issues that led to collapse of these projects.
Similar observations were made by Mullins and Flaherty (1995) in the Kumil Timber Right Purchase (TRP) area in Madang, where villagers had difficulty in managing their village-based timber company. Mullins and Flaherty (1995) pointed out that leaders of this community, particularly the company executives, lacked basic management and leadership skills that were necessary for the success of such local entities. In contrast, a positive aspect of community leadership was observed in Madang (Bun 2011), based on the Foundation for People’s Community Development’s (FPCD) successful project through the Madang Forest Resource Owners Association (MFROA) since 1997. Bun (2011) believed that the success of MFROA was because of community’s capacity to provide leadership, and to collaborate and participate effectively, in implementing this timber project.

In the mining sector, studies such as Koyama (2005) and Maru and Woodford (2005) suggest that the involvement of local communities, through their leaders, was part of process of implementing petroleum projects in the Southern Highlands Province. Other studies in the mining sector note the importance of community participation, especially in accommodating landowners’ views in decision making processes. For example, studies of the Ok Tedi mining project (Jackson 1998; Sharp and Offor 2008; Siop, 2008; Filer et al. 2012; Carr and Filer 2013) revealed that involvement of mine-impacted communities and their leaders is critical for the extension of the mine life. Wissink (2001) and Wissink et al.’s (2001) studies on the impacts of the mine on the livelihoods on the Ok Tedi communities suggest that the failure or success of Ok Tedi Mining Limited (OTML)-sponsored community projects depended on the collaboration of communities and their leaders with OTML on development issues.

Bainton’s (2006, 2008) studies of the Lihir Gold mine project’s impact on socio-economic and cultural changes and local leadership structure suggest that community involvement was a fundamental component of decision-making processes among the mine-impacted villages. Liu’s (2010) work on the livelihood dynamics of Lihir Islanders corroborated Bainton’s findings. Both studied echoed Lagisa’s (1997) earlier findings on women’s involvement in a mining project on Lihir, as to how community involvement was crucial to project success. Similarly, Banks’ (2008) study on conflict resolution in number of mining projects, including Ok Tedi and Lihir, concluded that community disputes are related to clan and tribal identities and recognition, as all groups want to be part of the decision-making in development process.

There have been a small number of studies in PNG specifically focused on the role of community leaders in resource development projects. For example, Haley and May (2007) and Bainton (2008) studied the roles of community leaders in their capacity as landowner association executives, detailing how they lead and influence the associations and communities in the resource-rich provinces of Enga, Southern Highlands and New Ireland. Their studies highlight the significant roles of community leaders, but do not clearly identify specific roles and modes of the community leaders in resource
development regions. My review of this literature suggests there is much more work to be done on the roles and modes of behavior of community leaders in natural resource development in PNG.

2.6 Conflicts in natural resource projects in PNG

Another theme that requires considerable attention in resource development context is that of conflict. Conflict is an inevitable phenomenon in human life, and it arises when two parties have opposing views. It ranges from personal to inter-group to community-wide conflicts (Kehatsin 2015). At the micro-level, such as the village setting in PNG, conflicts arise when one clan claims ownership over land rights and another clan believes they are the legitimate owners. It may also arise within two members of the same clan having opposing ideas over same piece of land, properties and resources (Banks 2008; Martin 2013). The micro-level conflicts have the potential to scale-up and feed into large-scale armed conflicts, such as those that occurred in PNG on Bougainville, and in the neighbouring Solomon Islands, which are protracted and serious, and may ultimately require costly external intervention (Allen and Monson 2014).

As I noted in Chapter 2.5.1 above, in the natural resource development context in PNG, conflicts frequently originate from disputes and dissatisfactions over the distributions of benefits (i.e, royalties, compensation payments) from the resource development project (Kepore and Imbun 2011). There is a large and growing literature on natural resource development as a source of conflict (Banks 2008). For example, Kepore and Imbun (2011), Haley and May (2007) and Allen and Monson (2014) suggest that conflicts over land and extractive resource developments are on the rise across PNG. This rise in conflicts is likely to reflect the heavy resource dependency in PNG, and that the nation has suffered poor economic growth over several decades despite booming resource projects. Many conflicts in PNG are experienced in areas around resource developments, and range from family disputes over the distribution of compensation payments through to civil war (Kepore and Imbun 2011; Banks 2008; Allen and Monson 2014). Explanations of the links between resources and conflict (e.g. Reilly 2008) posit a range of reasons, such as the effect of natural resource developments on governments, governance and economies, and the political aspirations of resource-rich regions. In the PNG context, weak and often corrupt governance, inappropriate economic policies and management practices, and separatist sentiments in resource-rich regions have all fermented conflicts around resource developments (Banks 2003; 2008). Banks (2008) argues that resource development conflicts in PNG are better conceived as conflicts linked to social identity, relationships and ownership rights over the resources. But, if taken from a general Melanesian perspective that natural resources are for communal use, implying that everyone has the right to use and access, that could mean these resources become an agenda for social and political conflicts (Banks 2008). In this case, as suggested
by Banks, traditional conflicts in Melanesia provides only a guide to better managed processes for conflict resolution, particularly those associated with resource development in PNG.

This analysis suggests a number of weaknesses and gaps in conventional approaches to resource development agreements that require re-thinking and re-organising prior to entering into such agreements with communities to develop natural resources in PNG. In recognition of this, and building on successful examples, Allen and Monson (2014) proposed a ‘hybrid’ approach to resource development to appropriately manage and resolve conflicts relating to land and natural resources. They further recommended research and interventions to strengthen the land and development mediation process and, in turn, the prospects for both national and regional development security. As they note, let unattended, land and development disputes can boil over interpersonal and inter-group violence, which, in turn, can scale-up and escalate into more widespread conflicts, as observed many parts of PNG (Allen and Monson 2014).

2.7 The role of leadership in natural resource projects in PNG

The purpose of this section is to explore the connections between community leadership and natural resource development outcomes in PNG. Studies of community-based natural resource management and development (e.g. Warner 2000; Liu 2010) have shown that community leaders play important roles in the resource development context. Community leaders’ close engagement with the development project ensures streamlined centralised decision-making processes to village communities (Randle and Dhillon, 2004). In many ways, the local community leaders have assumed the role of traditional court systems, managing disputes and conflicts within the community, and restoring and reconstructing communities in times of inter-state or inter-tribal crises (Regan 1999; White 2006; Banks 2008; Kuwimb 2010).

In PNG, community leaders play a particularly important role as mediators in rural communities in the context of development projects. They facilitate communication, negotiations and decision making between resource owners and development agencies (Ambang 2007; Mawuli 2013). They act as a link between traditional and modern communities and economies (Rivers 1999; Ambang 2007) and improve service delivery to their people because they are close to them (Ambang 2007; Mawuli 2013). A final key role of local community leader is to represent resource owners’ views, disseminating and communicating information relating to the development processes.
These issues were introduced in Chapter 1, and are discussed for the thesis case studies in Chapter 4. Many of these traditional leaders have assumed roles as chairmen, presidents, and directors of their own community groups, institutions and associations.

In this sense, a leaders’ measure of performance, viewed by their followers is determined by how effectively they provide these goods and services to their communities and determine overall community prosperity and stability. For example, in a traditional leadership context, a clan leader takes responsibility for ensuring that every member has access to land and other resources belonging to a clan equally among its members for food production and other sustainable livelihood outcomes. In this case decisions made by clan leaders are based on livelihood outcomes of their clan members. In terms of situation involving projects such as mining and logging developments the approaches remain the same at the local community level where clan leaders are the decision makers and are responsible for delivering small community-oriented projects.

Thus, in the event of a mining or logging project, it is usually the clan elder who is appointed as leader of the project. When this occurs, the scope of responsibilities of the clan leader increases dramatically. His judgment and decisions have to be based on a wide range of factors including economics, marketing, business benefit sharing. He is caught in the dilemma of making decisions for the developer as well as for his/her people. Appointment of leaders in communities is made by villagers with high expectations of their role. To take into account the challenges presented here and the traditional and modern forms of leadership practiced in PNG’s rural communities, a number of conceptual frameworks were considered and employed as guidelines in the study, are discussed in the following sections. In contemporary PNG, community leaders are expected to make leadership decisions for modern institutions, viz. the community associations and companies established to receive development payments and, from them, meet the needs of their communities. Thus, it is clear that decisions that the leaders and communities make directly impact on their livelihoods in terms of prosperity and stability (as introduced in section 2.4.1 and further discussed in Chapters 5.4.1 and 7.5). Prosperity refers to improve services such education, health infrastructure and access markets, while stability is about peace and improve law and order in the community may or may not result from development. However, the styles and decision-making processes of community leaders are not understood in this context, and are therefore a central focus of my research. The next sections discuss benefits, challenges and risks associated with community leadership in the context of resource development in PNG.
2.8 Benefits of community leadership

There are many potential benefits from effective community leadership in contexts such as PNG, echoing those of ‘participatory’ approaches to resource management globally (e.g. Charnley and Poe 2007; Larson and Soto 2008). Leadership scholars such as Prideaux and Beg (2007) and Yadav (2013) stress the importance of community leadership as a medium for negotiation and communication between communities and other stakeholders. They argue that community leadership is important for achieving development outcomes and service delivery because it operates in closer proximity to the people and communities it serves. This is consistent with Randle and Dhillon’s (2004) view that effective community leadership is truly a partnership between communities, government and other relevant stakeholders.

The notion that community leadership can have a positive impact on the livelihoods of communities is common in the resource development and management context. Many studies relating to community leadership (e.g., McKeown 2001; Maru 2002; Ketan 2004) support the idea that community leadership is fundamental to achieving community-based resource development livelihood outcomes. This is because it can address the challenges of resource development, benefit sharing and sustainable development better than the traditional top down or centralised systems (Kulwaum 1985; Pretty 1995; Mendoza and Prabhu, 2006; Sheehan 2009). These authors also note that projects can run more efficiently when community participation is encouraged through community leadership, because people affected by the project are involved in the project and so project managers are able to access vital information necessary for the project’s success. In addition, beneficiaries of the project are more likely to support the project. Hare et al. (2003) noted that effective community leadership could to increase the legitimation of development and management decisions, and so increase project effectiveness; it could also encourage social learning and shape community and public opinion. Effective community leadership is, as demonstrated by numerous studies, therefore considered necessary for successful development of natural resources (Pretty 1995; Franches 1999; Ostrom 2001, 2005; Yadav 2013).

In contemporary PNG, community leaders promote service delivery and improve local community livelihoods by closing the gap between the traditional and modern leadership contexts, and by bridging traditional and modern economies (Ambang 2007). In the resource development context, community leaders play a key role in representing community landowner views, disseminating key information, negotiating relating to the development processes in the communities. Thus, community structures and processes have standing at higher levels of authority (national, provincial or local), which is particularly important given the diversity of in PNG’s communities. An effective local community-level leadership system is considered fundamental to enhance community engagement and participation in decision-making processes (Ambang 2007; Ostrom 2007; Agrawal et al. 2008).
2.9 Challenges of and risks associated with community leadership

An important challenge for community leaders is to manage conflicts between traditional and modern leadership concepts and practices. In the interactions between traditional and modern value, two key challenges faced by community leaders are evident: ‘inter-tribal conflicts’, and clashes between modern and traditional values. Inter-tribal conflicts refer to tribal value systems rivalries that exist between PNG traditional tribes and clans (Ambang 2007). A tribe, clan, or ethnic group usually believe that their norms, beliefs and values are better than others who may have similar cultures and traditions (Ambang 2007; Prideaux 2007; Koim 2013). This is content with other similar studies (e.g. Waiko 1990; Barker 1985; Holtznecht 1996; Waiko 2013) that communities comprise of more than 800 cultural and linguistic groups.

For example, traditional leaders are aligned more closely to clans, co-opting them where convenient. In some cases, leaders put their traditional loyalties aside to favour self-interest (e.g. community leaders selling resource rights that actually belong to others).

Another challenge confronting community leaders is the clash of modern and customary value systems. This clash of cultures is widely discussed in the literature (see Epstein 1968; Finney 1973; Kenny 2002 and others including Prideaux and Beg 2007) which recognise that indigenous people often have to compromise their cultural values in favour of values associated with ‘development’. For example, as quoted in (Julien et al. 2010, pp. 123):

> Everything that I stood for as an indigenous person; culturally, linguistically and racially was challenged, questioned and sometimes undermined. I felt almost had to give up who I was as indigenous person to work in government...in this sense a person had to fit into their culture to survive in the system. In other words, you almost have to sell out on yourself to survive (Kenny 2002).

There are also risks associated with community leadership in a development context; those that considered important are described in the next two subsections.

2.9.1 Over representation

The case for encouraging community-based leadership was outlined above. However, there are also risks if approaches to resource development over-emphasis community-based leadership, and it does not deliver according to communities’ expectations. This may be the case if, for example, poor
Community leadership manifests itself in nepotism, lack of inclusion and mismanagement of community funds and projects. Consequently, Yadav (2013) argues that if community-based leadership is over-emphasised, there is a danger that community members may lose interest in the process of community-based decision making, because they feel that they are excluded from the important parts of decision-making processes and from learning, as well as from the benefits they should be receiving. This makes them feel excluded from the very activities in which they are supposed to be involved (Burkey 1998).

2.9.2 Under representation
Conversely, another risk is ‘under-representation’ of the interests of the community as a whole. This refers to risks related to the formation of fragmented smaller groups, or clan-centred leadership, within communities. Yadav (2013) refers to this clan-centred approach as ‘pragmatism’, and acknowledges it as an important feature of community leadership that encourages people to participate in decision-making processes with an expectation of good outcomes. However, Yadav argues that if communities become too fragmented, this may lead to a failure of the leadership approach in terms of achieving livelihood outcomes for the community as a whole, as leadership focuses on interests of the fragments rather than of the whole. This has undesirable affects the outcomes of community leaders’ decisions about resource development in the long-term.

2.10 The conceptual frameworks underpinning this study
This section discusses the conceptual frameworks that underpin this research. These frameworks were identified, in the context of the literature reviewed above, as providing the necessary foundations for the research conducted for this thesis. Three frameworks - the Social Ecological Systems Framework (SESF) (Ostrom 2009), the Sustainable Livelihood Framework (SLF) (Chambers and Conway 1991, 1992; DFID 1999), and relevant models of leadership - were identified as relevant to different aspects of the study. Each of these models is discuss in the following sections.

2.10.1 Social Ecological Systems Framework
The Social-Ecological Systems Framework (SESF) was proposed by Ostrom (2009) as a ‘general framework for analyzing the sustainability of socio-ecological systems’. The framework is an appropriate one to use at a high level, as it explicitly describes the linkages between number of elements in resource use and management systems.
In the case of my research, the SEFS provides an appropriate overall framework within which to conceptualise resource development and use in PNG. My focus is on community-level governance systems as those that mediate between users (in this case, development projects) and the outcomes of development for local communities. Development takes place in particular ecosystems, which shape the traditional resource use regimes of communities, and in the contexts of national, subnational and local social, economic and political settings. Figure 2.1 shows the composition of the features of that comprises rural ecosystem.

Figure 2.1: The representation of the Social Ecological Systems Framework relevant to this study.

Sources: Adapted from (Ostrom 2009).

The relevance of this framework in PNG is applicable as most communities (over eighty percent) of the population is rural based. This is where most of the natural resources (such as forests and mineral) ones this study investigates are located. The development of all these resources also occur in these such remotes locations which affects most of the livelihoods of the local communities. Thus, the usefulness of such framework would assist to understand the interactions between various components and impact each has on each other in this multifaceted ecosystems.
2.10.2 The Sustainable Livelihoods Framework

In the context of my research, I adopted the Sustainable Livelihoods Framework (SLF) that provides a means of structuring investigation into the livelihood assets and strategies, and the vulnerabilities of case study communities. This approach has been adopted in other studies of PNG rural communities (e.g. Liu 2010; Mulung 2012).

The SLF was developed to understand relationships and interactions between different levels of stakeholders in a development context (DFID 1999). It is seen as a consolidated profile of livelihood development and wellbeing within the natural resource development context; that is required to give focus to stakeholder engagement and planning in the lead up to commissioning of a project (Chambers and Conway 1991).

While there has been much discussion and critique of the SLF and related approaches (see, e.g. Scoones 2009), the SLF remains a very useful construct for characterizing livelihoods at local levels as presented and discussed, in terms drawn from Liu (2010) and Anderson (2015). In this study, SLF was adopted purposely to understand the relationships between livelihood assets, livelihood strategies, institutional structures and development outcomes, particularly in the context of the natural resource-based development projects in this study. Figure 2.2 illustrates SLF comprising the various components.

![Figure 2.2: Sustainable Livelihoods Framework.](image)

Source: Adapted from Chambers and Conway (1991) and DFID (1999)
The components of SLF that are relevant to my study are described below:

The **vulnerability** context refers to shocks, trends and seasonality as the factors classified as vulnerabilities that affect people’s livelihoods – often, but not always, negatively. These usually are uncontrollable immediate or medium-term events. However, they usually generate significant impacts—such as human shocks (e.g., illness, accidents); natural shocks (e.g., floods, earthquakes); economic shocks (e.g., job losses, sudden price changes); conflict (e.g., war, violent disputes); crop/livestock, health shocks. Shocks and trends may be linked. Some changes that appear as trends (such as increased infection rate for diseases such as AIDS and malaria) can impact upon a household or individual as severe shocks (i.e. death in the family). Similarly, an initial shock (flooding) may be a long-term trend because of increased sediment in the river system.

**Trends** can have a positive or negative effect on livelihoods and involve changes that take place over a longer period of time. Examples of such include, population trends (causing an increase population pressure); resource trends (e.g., soil erosion, deforestation, water pollution); economic trends (e.g., declining/increasing commodity prices, development of new markets); trends in governance/politics (e.g., increasing/decreasing accountability); and technological trends (e.g., the development of more efficient production techniques).

**Seasonality** refers to seasonal changes, such as those affecting: assets, activities, prices, production, and health and, employment opportunities etc. Vulnerability arising from seasonality is often due to seasonal changes in the value and productivity of natural capital and human capital (such as through sickness, hunger). In a similar way, development opportunities and expectations that resources owners perceive are seen as the vulnerability situations in this study.

**Livelihood Assets** are those assets on which livelihood are built, and are often categorised as: human, natural, financial, social, and physical. People’s choice of livelihood strategies, as well as the degree of influence they have over policy, institutions and processes, depends partly upon the nature and mix of the assets they have available to them. **Human Capital** represents the skills, knowledge, and capacity to work, and good health that together enables people to pursue different livelihood strategies and achieve their livelihood outcomes. It is necessary to be able to make use of the other four types of livelihood assets. **Natural Capital** is the term used for the natural resource stocks (e.g., forest, land, clean air, fishery, water, coastal resources) upon which people rely. **Financial Capital** is defined as the financial resources that people use to achieve their livelihood objectives. These resources include savings, access to loans, wages, pensions and other entitlements (e.g., royalty/equity/compensation). **Social Capital** is derived from: investment in; interactions (through work or shared interests) that increase people’s ability to work together, membership of formal groups in which relationships are governed by accepted rules and norms; critical benefits of social capital providing access to information, influence or power, and claims or obligation for support from others. **Physical Capital**
comprises basic infrastructure and physical goods that support livelihoods. Key components of infrastructure include: affordable transport systems, adequate water supply and sanitation; energy (that is both clean and affordable); good communications/access to information; shelter of adequate quality/durability; and other components of physical capital include productive capital that enhances income (e.g., vehicles, outboard motors, bicycles, sewing machines, agricultural equipment, household goods and utensils and personal consumption items (such as radios and refrigerators).

Institutional structures and processes dimension of the sustainable development framework comprises the social and institutional context within which individuals and families construct and adapt their livelihoods. The institutional structures and processes embrace issues associated with leadership, power, authority, governance, laws, policies, public service delivery, and social relations as played out across government agencies, private sector, NGOs, clan groups and community based organisations. The institutional organisations through the application of their policies and processes have the power to determine; access (to various types of capital, to livelihood strategies and to decision-making bodies and sources of influence; the returns to different types of capital, and to any given livelihood strategy.

Livelihood strategies refer to the range and combination of activities and choices that people make in order to achieve their livelihood goals. They include: how people combine their income generating activities; and how they use their assets; which assets they chose to invest in; how they manage to preserve existing assets and income. Strategies may reflect underlying priorities, such as to diversify risk. Members of a household may live and work in different places, engage in various activities, either temporarily or permanently. Livelihood Outcomes are the achievements gained by implementing livelihood strategies. Outcomes can be reflected in: more/less income; increased/decreased wellbeing; reduced/increased vulnerability; improved/decreased food security; more/less sustainable use of natural resources; improved/deteriorating social relations and status; stability and instability; prosperity or poor. These outcomes enable us to understand: the ‘output’ of the current configuration of factors within the livelihoods framework; what motivates people to behave as they do; what their priorities are (as a basis for planning support activities); how they are likely to respond to new opportunities; and which performance indicators should be used to assess support activity.

2.10.3 Hybrid Models of Leadership
This section reviews a number of models of leadership that are relevant to this study, as the basis for developing a hybrid model of leadership in Chapter 3. These are values-based leadership approaches
(Joseph 2015), the Situational Leadership Model (Fiedler 1967; Hersey et al. 1996), and the Big Shot and Grand Chief models (Martin 2013 and Dom 2015).

### 2.10.3.1 Values-based transformational leadership model

The values-based transformational leadership model is a principle-centred model founded on indigenous leadership values and beliefs (Joseph 2015). Most of these values are described as a cross-cultural concept, where each value reflects different priorities of preferences (Hofstede 2001; Schwartz and Bardi 2001; Ambang 2007; Joseph 2015). In values-based approach, the term 'transformational leadership' is used to describe a leadership mode that is synonymous with a vision or objective in a development context (Bass 1985; 1999 & Steidlmeier 1999; Joseph, 2015). The values-based transformational approach is manifested when leaders are able to progress their development agendas by engaging and involving communities to align themselves in such a way that people think outside of their own personal interests, and work for the purposes of the group or wider community (Bass & Avolio 1994). Many scholars (e.g. McCalman et al. 2011; Vinkenburg et al. 2011; Flaninga 2012; Chung, Judge and Liaw 2012) have noted that values-based transformational leadership approach has achieved some positive results, including development of health care programs, women’s leadership, increased business performance and customer services improvements.

Other studies (e.g. McCalman et al 2012; Joseph 2015) conducted in a number of developing nations (including, Tonga, Samoa & PNG) in the South Pacific have investigated the effects of transformational leadership on development outcomes. These findings have suggested that a values-based approach to leadership can produce positive outcomes that are linked to wider community’s development objectives. However, while values-based leadership can produce positive results, it also has limitations, particularly in connection to the region’s various fragmented ethnic and tribal groups (Joseph 2015). While acknowledging these limitations, there have been positive outcomes from initiatives that tested the applicability of values-based leadership in PNG (McCalman et al. 2012; Joseph 2015).

Joseph (2015) points out that a values-based model advocates that leadership development begins with indigenous South Pacific Values (SPVs). Table 2.3 shows Joseph’s (2015) classifications of SPVs, based on the values-based model proposed by Schwartz (2003) and Hofstede (2006).
As Table 2.3 demonstrates, the South Pacific region has a collectivist culture (Markoff and Bond 1980; McLeod 2007) with high power distance, which places importance on masculine approaches to leadership (Hofstede 2013). This means individuals are intrinsically linked to ethnic, tribal and family connections, where community-oriented interests are considered important over individual interests (Saffu 2003). Thus, the leadership modes in the diverse regions of South Pacific depend on what they prefer to be high values in their societies (Brownlee et al 2012; Joseph 2015). Most South Pacific values and traditions have close association to culture and status in their societies. Consequently, some of these values are accommodated in the transformational leadership approach (Joseph 2015).

Table 2.4 describes an analysis of the common values found in transformational leadership in relation to the SPVs. An important aspect in this analysis is the close relationship that indigenous South Pacific culture has with the communal-altruistic and people-centric dimensions of transformational leadership (Joseph 2015). As stated above, because of the collectivist dimension of South Pacific culture, the transformational leadership approach aligns itself with communal interests rather than individual interests. This provides the basis of the development of transformational leadership, which
usually entails a deep understanding of local culture and origin as the basis of indigenous leadership development (Joseph 2015). However, Joseph argues that, although communal-altruistic and people-orientated transformational values are similar to the indigenous values found in the South Pacific, there are also differences that exist in the region. Four such differences are described below:

1. **Mission or vision driven:** the South Pacific culture is generally characterised as short term orientation rather than a long term visionary based culture (Hofstede 2013). Lack of visionary leadership was demonstrated in the struggle for independence in of the South Pacific nations, where traditional leaders mobilised local communities to achieve change. It is argued that the mission/vision driven approach is the key component that separates effective leadership from routine traditional South Pacific leadership. The mission/vision driven approach establishes foundations that are morally-based in the community, to help address some of the pressing ethical issues related to traditional leadership.

2. **Broader moral enlightenment:** Broader moral enlightenment is seen as a function of being “mission or vision driven,” and is the primary component that focuses on the ethical issues commonly observed in South Pacific leadership. It can be argued that the collectivism culture of South Pacific itself forms the basis for broader moral enlightenment, but there are many examples of varying levels of corruption, misappropriation and unethical practices among the South Pacific leaders themselves. In essence, the moral enlightenment element in South Pacific culture emphasis more the integrity of the leaders.

3. **Development-orientated:** Development-orientiation is again a function of mission/vision driven approach discussed above. This component is guided by an objective or goal that empowers and inspires indigenous leaders. The component itself is important for the South Pacific leaders, including those from PNG. This orientation is critically important for leaders in the context of this study, who require the culture of empowerment and vision-driven approach, so that they are capable of contributing to the resource and economic development needed in the region.

4. **Stakeholder values:** The values-based transformational leaders have been demonstrated to have a strong focus on relationships and achieving common values, while the transactional leaders focused on self-interested factors. While the interest of SPVs are associated with communal stakeholder concerns, these are often hindered by the diverse ethic and remote geographic conditions that limits close associations with each other.
Table 2.4: Values of transformational leadership and association with South Pacific Values

<table>
<thead>
<tr>
<th>Values of transformational leadership</th>
<th>Descriptions</th>
<th>Association to SPVs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communal-altruistic Mission/vision driven</td>
<td>An individual is connected to and responsible for friends, family, and community</td>
<td>Strong</td>
</tr>
<tr>
<td>Broader moral enlightenment</td>
<td>Leaders and followers are mission driven and committed to a vision. This includes proficient vision articulation. Actors are motivated by personal needs, however this characteristic isn't dominant</td>
<td>Weak</td>
</tr>
<tr>
<td>People-centric Development-orientated</td>
<td>The presence of a moral foundation, which isn't directly tied to outcomes, but a wider mission and vision</td>
<td>Weak</td>
</tr>
<tr>
<td>People-centric</td>
<td>Followers are treated as ends in themselves. Leaders enact individualized consideration towards followers</td>
<td>Strong</td>
</tr>
<tr>
<td>Development-orientated</td>
<td>The follower is transformed in the process. Transformation occurs in performance, outlook, and maximizing personal potential</td>
<td>Weak</td>
</tr>
<tr>
<td>Stakeholder values</td>
<td>Transformational leaders have a closer association with stakeholder values than transactional leaders.</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Source: Reproduced from (Joseph 2015)

The South Pacific Values-based approach is relevant to PNG, and a values-based approach was recently explored in a case study conducted by McCalman et al. (2012) in a health sector implementation program, using the transformational leadership principles. Observations from this study suggested positive results, including participants’ increased connections with their local cultures and traditions, and their positive attitudes towards acceptance of the values-based approach. This suggests the utility of a values-based model to investigate community level leadership in PNG.

2.10.3.2 Situational leadership model

Another leadership model that is relevant for this study is the Situational Leadership Model (SLM) (Hersey et al., 1996). The SLM was first described as contingency theory by Fiedler in 1967. The contingency theory states that: ‘leaders become more effective when they make their behavior dependent upon situational forces, including group member characteristics. Both internal and external environments have a significant impact on leader’s effectiveness. In this situation, contingency leadership theory involves situational leadership and normative decision models’.

Expanding from this model, Hersey et al. (1996) described leadership that deals with relationships between a leader’s characteristics and the situation. This means that the conduct (performance) of a leader depends on both his or her disposition and the situation/environment in which they operate; the
outcome of the leadership mode is influenced by situational factors. This situation is similar to PNG community leaders’ decision-making choices in resource development contexts, in which they are confronted by many internal and external factors. As Figure 2.1 illustrates, the SLM places combinations of ‘task and relationship behaviours’ into four quadrants. Each quadrant represents a different leadership mode as described in Table 2.5.

![Situational Leadership Model](image)

**Figure 2.3: Situational Leadership Model, showing task vs. relationship behaviour and degree of readiness.**

Source: Adapted from Fiedler (1976) and Hersey *et al.*, (1996)
Table 2.5: Leadership modes associated with the Situational Leadership Model.

<table>
<thead>
<tr>
<th>Leadership mode (M)</th>
<th>Description/definition</th>
</tr>
</thead>
</table>
| Influencing         | High task and low relationship.  
The 'influencing' mode is very directive because the leader emphasises a lot on input but a minimum amount of relationship behaviour. An autocratic leader would fit here. |
| Selling             | High task and high relationship.  
The 'selling' mode is also very directive, but in a more guiding, persuasive manner. The leader provides considerable input about task accomplishment but also emphasises human relations. |
| Participating       | High relationship and low task.  
In the 'participating' leadership mode, there is less direction and more collaboration between leader and group members. The consultative and consensus subtypes of participative leader generally fits into this mode. |
| Delegating          | Low relationship and low task.  
In the 'delegating' leadership mode, the leader delegates responsibility for a task to a group member and is simply kept informed of progress. In carried to an extreme, this mode would be classified as free-rein. |

Source: Hersey et al. (1996).

According to Hersey et al. (1996), the SLM states that there is no one best way to influence group members. The most effective leadership style depends on the readiness level of group members. However, leaders must first identify their most important tasks or priorities. Second, they must consider the readiness level of their followers by analysing the group’s ability and willingness. Depending on the level of these variables, leaders must apply the most appropriate leadership style to fit the given situation.

In situational leadership, readiness is defined as ‘the extent to which a group member has the ability and willingness or confidence to accomplish a specific task’. The concept of readiness is therefore not a characteristic trait, or motive, it relates to a specific task. Readiness has two components: ‘ability’ and ‘willingness’. Ability is knowledge, experience and the skills an individual or groups brings to a particular task or activity. ‘Willingness is the extent to which an individual or group has the confidence, commitment and motivation to accomplish a specific task’. The key point that Hersey et al. (1996) emphasise is that as a group member’s readiness increases, a leader should rely more on relationship behaviour and less on task behaviour. When a group member is ready, minimum task or relationship behaviour is required.
Thus, use of the situational leadership model is appropriate for this study. The model is useful because it builds on other explanations of leadership that emphasise tasks and relationship behaviours of leaders and members in a team. Further, it explains how leaders can match their leadership mode to the readiness of community members. The model classifies leadership mode according to the relative amounts of task and relationship behaviour the leader engages in. Four leadership modes are identified in this model, all with different combinations of tasks and relationship behaviour, rated as high versus low. As the model suggests, readiness refers both to ability and willingness to accomplish a specific task. As group member readiness increases, a leader should rely more on relationship behaviour and less on task behaviour. When a group member is ready, however, minimum task or relationship behaviour is required.

2.10.3.3 Big Shot and Grand Chief Models

I reviewed these related forms of contemporary leadership in PNG in Section 2.2.4. As I noted there, the emergence of Big Shot and Grand Chief Models of leadership are indicative of how leadership models in PNG are shifting from more traditional modes to various hybrid forms. Thus, a hybridity approach to leadership models is helpful to understand the leadership modes in PNG communities.

As I noted earlier, because the concept and definition of community leadership are fluid, and contentious because there is not a grounded definition, hybrid concepts are appropriate. Other studies (e.g. McCalman et al 2012; Joseph 2015) have used similar models to understand the issues relating to integration of traditional and modern concepts. In the development and livelihoods contexts, Dutt (2014) also advocates the use of hybrid approaches in the contemporary social, cultural and economic environments.

In Chapter 3, I draw on these various models of leadership to suggest a framework appropriate for this study.

2.11 Chapter conclusion

This review of the literature reveals that, while there are large bodies of work about rural development in ‘underdeveloped’ countries such as PNG, and a significant body of work on PNG itself, most of this research has focused on models of development, and on systemic reasons why development has ‘failed’ many rural Papua New Guineans. There has been relatively little work that has focused on the characteristics of community-level leadership in the context of development activities. However, there is a wealth of anthropological literature (e.g. Sahlin 1963; Chowning 1979: McKeon 2001) seeking to
understand social dynamics, relationships, cultural differences, linguistics diversities, values and norms, and beliefs, and more recently on clashes between traditional and modern conflicts. Other research (e.g. Banks 2008; Waiko 2010; Martin 2013) has focused on social structures, compositions and identities. While these studies are important, there are also other key components of the social systems in PNG such as the leadership at the local level that have not been well addressed. This research aims to fill this gap.
3.1 Introduction

This chapter describes the methodological approach used in this research, and its design. This approach includes descriptions of theoretical propositions and methods involved in the identification, collection, analysis and presentation of data. The central aim of these approaches is to provide coherent links between the data identified, collected and the conclusions that are drawn to answer the research questions.

The research methodology and design follow the purpose of the study, as introduced in Chapter 1, and the literature reviewed in Chapter 2. As noted there, the underlying premise of the research is that, while natural resource-based development can provide opportunities for to improve the livelihoods of rural communities, there is often a disjunct between the potential of development benefits to benefit local communities and the benefits they actually receive; and that – as noted by many authors (Filer 1989; Banks 2008; Kepore and Imbun 2011; Martin 2013; Anderson 2015) – this gap is especially marked in rural Papua New Guinea.

The chapter presents the research methods, the research design, the fieldwork procedures, the fieldwork and field data collection methods, and methods of data analysis.

3.2 Qualitative research methods

The study adopted a qualitative research framework, as described by (Babbie 2004; Maxwell 1996; Creswell 2003; Chase 2005; Liamputtong and Ezzy 2005). The framework comprises of five components that are fundamental to qualitative research. These are the research goal, research question, conceptual framework, methods, and the validity and credibility measures undertaken to conduct the study. These are illustrated in Figure 3.1.
The first component of the design framework is the research goals. A research goal is a statement that provides a description of why a research investigation is carried out (Maxwell 1996; Creswell 2003). The research goal specifies what the researcher intends to achieve in the study, and also serves to assist the researcher in remaining focused throughout the research investigation process (Maxwell 1996; Denzin and Lincoln 2005).
3.2.1 Research goals

As stated in Chapter 1, the overall goal of the study is to understand different modes of community-level leadership in PNG, how they function in different resource development contexts, and the implications of those modes for development outcomes at the community level. Understanding of these issues has the potential to guide community members, investors, government and other relevant stakeholders achieve better outcomes from development for local communities. This research goal is illustrated in Figure 3.1.

3.2.2 Research questions

The second component of the design is the research questions posed to pursue the research goals. As demonstrated in Figure 3.1, research questions are centrally located within the design framework. This implies that the research questions are the central components that:

- form the basis of this research and act as the glue that pulls together all other components of the research design to achieve the common goals of the study (Yin 2003; Maxwell 1996)
- tells in specific terms what the research problem is that is being examined, and why it should be examined (Maxwell 1996; Mulung 2012) and
- shapes thinking in the research strategy, especially on the question of how to accommodate and incorporate theoretical propositions and appropriate methodological approaches in conducting the research (Eisner 1991; Maxwell 1996).

As noted above, the goal of the study was 'to understand different modes of leadership, and how they functioned in different resource development contexts. Achieving this study goal is important, because as I argued earlier in chapters 1 and 2, there have been limited studies into local community leadership in the context of resource-based development. I further stated that the relationship between communities and their leaders, particularly their leaders’ motives, intentions and behaviour, must be fully explored and understood as a basis of informing decisions that benefit the communities. On this basis, the primary research question asks:

Are there forms of community level leadership that enhance livelihood outcomes in the context of natural resource based development projects in PNG?

The primary research question was investigated by exploring three subsidiary research questions:

1. What are the livelihood assets, strategies, the institutional structures, and leadership styles evident in the communities in the three case studies?
2. What are the effects of these on the development outcomes of stability and prosperity?

3. What are the implications for local and other level institutions and actors seeking to facilitate development?

3.2.3 Conceptual frameworks

The third component of the design comprises the conceptual frameworks through which the research questions are investigated. The conceptual framework provides the background setting in which all other components are situated. Community leadership approaches, behaviours and views are functions of both the intrinsic and aptitudes of individual and also of the cultural, social, economic and environmental influences in an environment (Maxwell 1996; Flick 2000; Mulung 2012).

The three conceptual frameworks that form the foundation for this study are those outlined in Chapter 2.10. As reviewed in Chapter 2, issues of community leadership in PNG are complicated by various interacting factors including historical, cultural and social norms, environmental conditions, and current socio-economic paradigms (Maru 2002; Koyama 2005; Maru and Woodford 2005; Mulung 2012). Therefore, the use of a single theoretical framework alone was not sufficient for the conduct of this study. Rather, a conceptual framework that integrated the perspectives of the three foundational frameworks was used to frame this research.

Figure 3.2 presents a diagrammatic representation of this integrated conceptual framework. It shows that Ostrom’s (2009) Social-Ecological Systems Framework is used as the overarching concept in which the other frameworks are embedded. The Sustainable Livelihood Framework (DFID 1999) provides the framework for analyzing livelihoods at the community and household levels, and a hybrid leadership model (developed from Fiedler 1976; Harsey et al 1996; Martin 2013; Joseph 2015) the basis for understanding how community leadership functions in these contexts in rural PNG communities.
This integrated framework seeks to make clear a number of elements. The first is the central pentagon, representing community leaders’ decision-making environment. The central position in which this pentagon is situated implies the centrality of community level leadership in mediating the outcomes of development for the livelihoods of community members.

The second feature is the five outer pentagons, which are components of the sustainable livelihood framework (SLF) (see Section 2.10.2). The orientation of pentagons indicates the holistic and interdependent nature of the relationships between each asset, and their relationships and interactions with community leadership. Each of these pentagons represents a particular livelihood capital asset (social, natural, physical, financial and human) of the community.

The third feature is larger framework of the elements of the Social, Ecological Systems Framework (SESF) (see section 2.10.1). Situating the SLF within the SESF illustrates that community leadership decisions are influenced by wide range of factors (including social, economic, environmental and political settings) that form large multi-level social ecological systems. These are the core systems underpinning the central theme of community leadership, and they link together all decision-making contexts.
systems within which communities assess and make decisions about sharing of natural resource benefits. Generally, the integrated decision model developed here illustrates the separable and interdependent processes involved in community-level decision processes. In Figure 3.3, I present the conceptual framework integrating hybrid leadership models.

Figure 3.3: The hybrid leadership model conceptualized and used in this study.

Sources: Adapted from Fiedler 1967; Martin 2013 Don 2015; Joseph 2015

The Hybrid Leadership Model was developed to bring together the existing leadership models relevant to this study. There are five key features underpinning the hybrid conceptual leadership model as illustrated in with five hexagonal shapes above.

The first is the central hexagonal, representing a Hybrid Leadership Model. The central position of this hexagonal represents how the hybrid model draws from the other leadership models to understand how leadership mediates the outcomes of development for the livelihoods of community members. The second feature is the four outer hexagons, which represent the four established leadership models described in Chapter 2: the situational leadership, Bigshot, South Pacific Values-based transformational and the Grand Chief leadership models (see Sections 2.10.3.1 to 2.10.3.3). Each of these hexagons represents a particular leadership model based on their own values, beliefs and
principles of the society and community they are founded on. The orientation of pentagons illustrates the actual or potential relationships between models and and their interactions to form a hybrid model.

The third feature is smaller hexagons inserted between the four outer hexagons of the model. These hexagons illustrate the links between each of the four leadership models within the integrated hybrid leadership model. These linkages represent how community-level leadership decisions are influenced by wide range of factors (including culture, values, norms, history; social, economic, environmental and political settings) that form large multi-level social development systems. As I discussed for Figure 3.2, that these are also the core elements that underpin the central theme of community leadership, and they link together all decision-making systems within which communities make informed decisions and about sharing of natural resource development benefits.

In Table 3.1, I used the characteristics of each leadership mode identified by the Situational Leadership Model (Table 2.5) as an organising structure for associating the different models. I describe the association between each model and the SLM mode, and elaborate on this in the text below. I do this because I use the SLM leadership modes as the primary structure for discussing my results in Chapter 2.10.3.2

<table>
<thead>
<tr>
<th>Leadership modes</th>
<th>Interpretation in PNG context</th>
<th>Association to PNG's BigShot Model</th>
<th>Association to PNG's Grand Chief model</th>
<th>Association to values-based leadership models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (Bik so) leadership</td>
<td>Self-centred approach and seemed to forgotten their moral obligations. Typical of an autocratic leader.</td>
<td>Strong</td>
<td>Strong</td>
<td>Strong</td>
</tr>
<tr>
<td>Participating (trupla man) leadership</td>
<td>'Yu trupela man' (you are an admirable person). A leader who is peoples oriented, spends ample time attending to their queries taking actions if required to.</td>
<td>Weak</td>
<td>Weak</td>
<td>Medium</td>
</tr>
<tr>
<td>Selling (mauswara) leadership</td>
<td>A person who uses existing opportunities to benefit themselves, particularly in association with resource development. Someone who does not worry about future.</td>
<td>Weak</td>
<td>Medium</td>
<td>weak</td>
</tr>
<tr>
<td>Delegating (Cultural) leadership</td>
<td>A clansmanship leadership, Regional leadership that centred on 'wantoks (relatives), families, regions, province.</td>
<td>Strong</td>
<td>Strong</td>
<td>weak</td>
</tr>
</tbody>
</table>
In the PNG context, influencing *(biksot)* leadership mode refers to a leader who is more concerned with his or her own interests aligning themselves with developers and pays little attention to landowner issues. This mode characterizes someone who uses his/her educational qualification to gain recognition and influential powers to undermine informally educated people’s views in community meetings and decisions. These are the leaders who are considered to have forgotten their moral obligations to serve their communities in their pursuit to join the ranks of an emerging socio-economic elite and a typical characteristic of an autocratic leader (Hersey *et al* 1996).

Participating *(trupla man)* leadership refers to a leader who is people-oriented, spends ample time attending to people’s queries, and takes necessary actions if required to do so. Such a leader gives less direction and creates an environment more conducive for collaboration between the leader and his or her people. This style of leader is more highly focused on relationships than tasks, and is somewhat the opposite of influencing *(biksot)* leadership (Hersey *et al* 1996).

Selling *(mauswara)* leadership mode refers to someone who does not worry about future. It also refers to a leader who uses opportunities that exist in development-impacted communities to benefit themselves at the expense of the legitimate resource owners. The leader here is also seen as something of a dictator who gives directives, but in a more persuasive and guiding manner.

Delegating *(cultural)* leadership refers to a clansman-ship leadership approach, where leaders only delegate responsibilities to their ‘*wantoks*’ (relatives), associates, those from the same region or province, and to some extent to their family members. Here, a leader delegates responsibilities to group members and is kept informed of the progress (Hersey *et al* 1996; Fiedler 1967).

### 3.2.4 Research methods

The fourth component of the design is the research methods used to collect relevant data to answer the research question. Here, mixed methods involving a primarily qualitative approach supported by quantitative data, were used. While the primary methodology used here was qualitative, use of quantitative data in this processes was also desirable and necessary. Thus, the study recognises both qualitative and quantitative data as complementary in gaining insight and understanding of the research questions. In this sense, the qualitative data consist of responses to open-ended examination through, primary and household interviews. The quantitative data comprises information such as that describing household’s income sources and consumption and spending behaviours. In recognising the importance of their complementary roles in research investigations, (Creswell *et al* 2007:5) characterize this method as mixed methods of research enquiry. These methods were chosen because they fit well with the need for studying the relationship and interactions between communities, their
leaders and development stakeholders, in the context of resource-based development. The second element of the research methods was that of the use of a case study approach.

3.2.4.1 A case study approach

As noted by Yin (2003), Olson (1995), and Oka and Shaw (2000), a case study involves interactive and interpretative analysis, and enables comprehensive understanding of the ways in which events occur and why, through in-depth engagement in a real life situation. Moreover, a case study approach allows use of different sources of data and incorporating historical, cultural, social, and political issues influencing the case under study (Olson 1995; Stake 2000; Stebbins 2001). Other studies (see Berg, 2004) also show that a case study stimulates in-depth understanding of a phenomenon; it allows the researcher to capture various gradations, patterns and more latent elements that other research approaches might overlook.

The rational for selecting this approach is because it is the commonly used method for collecting wide range of data from community studies, educations, health, public policies and business (Yin 2003). It is considered relevant for number of reasons, first, it allows the study to collect a lot of detail data that would not be easily collected with any other design methods (Patton 2002; Yin 2003).

The data collected is richer and of greater depth than can be found through other experimental designs. Second, case studies tend to be conducted on rare cases where large samples of similar participants are not available. Third, within the case study approach, scientific experiment can be conducted and fourth, case studies can help experimenters adapt ideas and produce novel hypothesis which can be used for later testing (Yin 2003)

Nevertheless, case study approach also has its limitations (Patton 2002; Yin 2003). One of the common criticisms is that the case study data collected cannot necessarily be generalised to the wider population. This leads to data being collected over longitudinal case studies not always being relevant or particularly useful. Secondly, from a scientific perspective it is argued that some case study approaches are not scientific. Third, it is argued that case studies are generally on one person, but there also tends to only be one experimenter collecting the data. This can lead to bias in data collection, which can influence results more than in different designs. Fourth, it further argued that it is also very difficult to draw a definite cause or effect from case studies (Patton 2002; Yin 2003)

While, acknowledging the strengths and limitations presented above, this study considered case study method because of the nature of the research problem and the questions asked; and, the useful of data collection, especially in cases of rare phenomena in varying resource development project cases.
The cases investigated involved forestry, agriculture (oil palm) and mining resource development projects initiated East Sepik, East New Britain and Western Provinces respectively. The forestry project is new and in its preliminary stages, so it has not yet impacted on the community; the oil palm project is in its tenth year of operation; the mining project has been in operation for 30 years. By covering three different resource projects in three different regions, the study aims to compare the leadership approaches taking into account the different resource sectors, cultural groups and length of development engagement.

### 3.2.4.2 Limitation of the research methods

Although a qualitative approach is considered suitable in this research, it does have limitations that need to be acknowledged. Patton (1990), Tellis (1997) and Krueger et al. (2000) argue that qualitative research is often subjective in nature and the challenge for the researcher is to design research that has procedural approaches which are appropriate and logically suitable to minimize such subjectivity. Kirk and Miller (1986) and Yin (1994) also note that there are criticisms of the case study approach, arguing that it lacks capacity to build generalizations that are applicable to other similar studies. However, a counter argument is that the problem lies in the very notion that all research needs to be generalized (Yin 2003). Instead, researchers can generalize findings to theory, analogous to the way a scientist generalizes from experimental results to theory (Alvesson and Skoldberg 2000; Yin 2003; Babbie 2004).

A number of potential biases exist and are considered important as they may threaten the validity of the research conclusions in this study. The main potential biases, as suggested in Patton (1990; Miles and Huberman 1994; Maxwell 1996), and also noted by Prideaux (2006), include:

- selecting data that agrees with the researcher's existing theory;
- selecting data that appears significant to the researcher;
- reactivity to the researcher by study participants;
- effects of the study setting on the researcher; and
- changes in the researcher as a consequence of conducting the research.

Acknowledging these limitations and biases, Beedell and Rehman (2000) and Malterud (2001) proposed bias related limitations in two categories: (i) participant-related biases and (ii) researcher-related biases that arise from conclusions drawn from observations. For example, Malterud (2001) and Mulung (2012) note that the effect of a researcher on a study, the principles and consequences of
sampling, and the processes of organisation and interpretation during analysis all affect research and are closely related to different aspects of validity. Thus, it is critical that recognition of limitations is considered in the theoretical propositions and the methodological approaches to be utilized (Malterud 2001; Patton 2002; Mulung 2012). This will assist a researcher to be aware of and engage in devising strategies that evades serious credibility issues. Each of these sets of issues is discussed below.

3.2.4.3 Participant-based biases

This category of bias refers to the subjectivity of the person who is supplying data in qualitative research. Since information on the community leadership decisions approach is derived by inferential analysis from the stories that participants relate and the activities they perform, it is very subjective. What research participants say may or may not necessarily correlate with their action and performance (Kirk and Miller 1986; Prideaux and Beg 2007; Mulung, 2012). Analysis from interactive story-telling accounts such as feelings, thinking, perceptions, beliefs and experiences is based on participants’ own worldview. As such, the stories they tell carry a certain degree of subjectivity in their judgements, attitudes and perceptions (Flick 2000; Prideaux and Beg 2007; Mulung 2012).

For example, from a study using a social-psychology model to understand farmers’ conservation behavior, Beedell and Rehman (2000) concluded that the behavioural measures used in that analysis were based on farmers’ own estimates of their behaviour and therefore were open to acquiescence bias. In recognising this limitation, a number of credibility measures to increase the trustworthiness of methodological approaches were instituted (Section 3.2.5), I describe the purposeful sampling principles adopted in designing the sampling strategy for this study.

3.2.4.4 Researcher-based biases

As observed by Malterud (2001:484), the researcher’s background and ‘research stance’ affects what he/she chooses to investigate, the angle of investigations, methods judged most adequate for the purpose, the findings considered most appropriate and the communication of the conclusions. This perspective assumes that a researcher always enters a field of investigation with a certain opinion of that field. From that assumption, qualitative research acknowledges the need that during all steps of a research process, the effect of the researcher should be assessed (Mulung, 2012). This behaviour phenomenon is often described as ‘reflexivity’ (Malterud 2001). It involves identification of preconceptions brought into the research investigation by the researcher from previous personal and professional experiences, pre-study beliefs about how things are and what is to be investigated,
motivation and qualifications for exploring the issues in question, and the perspectives and theoretical foundations and interest (Malterud 2001).

3.2.4.5 Validation of limitations and bias

Maxwell (1996), Prideaux and Beg (2007) and Liu (2010) argue that it is impossible to completely eliminate bias. However, the researcher is required to explain possible biases and how they will be minimized. On this basis, as the author, I made an undertaking to have an objective attitude to the way I conducted myself at every step along the research journey. Specific details of these measures are discussed at length in various sections. In Section 3.2.5, I describe ethical and credibility issues. Given my familiarity with the social, cultural and economic background of the research participants on one hand and the expectations of my own professional experience on the other, I was well-positioned for the research investigation task. I brought these two contextual viewpoints with me into the study. On this basis, I acknowledge that I was a former employee of Ok Tedi Mining Limited (OTML) from 2003 to 2010, prior to this commencing this study in mid-2010. This raises questions of possible biases entering the research setting. To counter the possibility of bias, I clearly articulated at the beginning of each focus group meetings and in-depth interviews that:

- I took no position on the issues to be discussed;
- the purpose of the research was to gather a rich data source from participants; and
- I am a member of the Sepik community, one of the case study communities.

During the course of interviews and community group meetings, I said little except to pose questions and allowed discussions to flow freely without expressing my opinion regarding the discussions. The data collection methods for the case study involved an interactive process and used several sources of evidence. Sections 3.4 and 3.5 and Appendix No. 2 describe the data sources and detail data collection techniques employed.

3.2.5 Measures to increase credibility

The final component of the design is research validity and credibility measures that were considered to authenticate the research study approach. In qualitative study, validity and credibility measures are subject to questioning and/or judgment (Maxwell 1996; Patton 2002; Prideaux and Beg 2007). Validity and credibility depend on the skill, competence and rigour of the researcher conducting the survey. ‘Credibility’ as described by Steier (1991), Granheim and Lundman (2004) and noted by Mulung (2012) refers to confidence in how well data and processes of analysis address the intended focus. In this study the following measures were considered to increase credibility.
3.2.5.1 The principle of purposeful sampling

The 'principle of purposeful sampling' (Patton 1990) was adopted as a strategy when selecting sampling units for this study. A detailed discussion about the strategy and how it was adopted and applied for the purpose of this work is presented in Section 3.3.2 of this chapter.

3.2.5.2 The principle of theoretical saturation

The 'principle of theoretical saturation of data' (Glaser and Strauss 1967; Strauss and Corbin 1998) was applied throughout the interview process at data collection stages. That is, the same questions were asked of different interview participants in each of the different case study regions until no new information was forthcoming for each category of question. The same approach was applied for each category of data set. How the methodological approach was applied in this research fieldwork is described in Sections 3.4 and 3.5 of this chapter. Theoretical saturation requires particular strategies to ensure that diversity within the population is included. This was generally done through randomly selected informants to confirm their responses are consistent with the primary participants' responses.

3.2.5.3 The principle of data triangulation

The 'principle of data triangulation' (Yin 2003; Denzin and Lincoln 2005) was used to cross-check the interviewing results (including the interviewer's observations) with participants. I cross-checked the interview results with observations to the extent that was possible. Many of the research participants discussed important information and experiences about their choices in the leadership and resource development decisions. In this way, resource owners' experiences and information were validated by triangulation. For example, I cross-checked what one resource owners and agriculture and forestry smallholder farmer said against the crops actually cultivated in the field, or what was consumed, with what was actually grown in food gardens. The process was ongoing either in the form of field notes or in the form of mental note-taking and writing memos as a daily diary after every field visit that I did. I also cross-checked with three individuals about the perceptions relating to benefits being distributed amongst the communities. All of the three responded in favor of what were stated by the respondents in the survey. This confirmed that the information provided by the survey participants were consistent with general community's perceptions.
3.2.5.4 Interviewee confirmation

Interview verification or reading back of interview summary of scripts was applied in the field to confirm and verify that what was recorded or written was as intended by the participants. At the end of every interview and meetings, the author read the summary of the notes that I made of the interview sessions and asked for confirmation of notes. In this way I made sure that my note taking and records of interview were interpreted as intended from the participants. Specific details are provided in the relevant sections in the methods for data collection (see Section 3.5).

3.2.5.5 Digital recording of interviews

In the areas where respondents provided verbal and written responses, a digital recorder was used to record the conversation between the respondents and researcher. This happened only for three participants including group meetings that were required to confirm that what was said during the meeting was consistence with my field notes.

3.2.5.6 Other strategies to increase credibility

While the strategies described above provide universal measures to increase credibility in qualitative research, researchers in the PNG context (e.g. Bainton 2006, 2008; Liu 2010; Mulung 2012) note that certain social and cultural peculiarities of Papua New Guinean societies have implications for the outcomes of similar social research studies. These peculiarities are based on the fact that many PNG rural communities are generally illiterate and highly dependent on personal observations, face-to-face meetings, oral communication and other social cultural interactions within their communities (Narokobi 1980; Morauta 1983; Filer and Sekharn 1998; Holzknecht 1996; Filer and Jackson 2000; Bourke and Harwood 2009; World Bank 2010; Mulung, 2012). As a result, these people have developed behaviours such as curiosity, eagerness and keenness, listening and talking and being willing to engage themselves in verbal communication with others including visitors in their communities (Holzknecht 1996; Liu 2010; Mulung 2012). These social behaviours may have drawbacks for the conduct of research such as this (Liu 2010; Mulung 2012).

One such drawback, as observed by (Mulung 2012), is the possibility of ‘getting lost’ in the processes of interview. There is often a tendency that people gather around a visitor, or in this case a researcher, to find out who the visitor is and why they are there. Mulung (2012) notes that the presence of other community members, who listening to every word that is said, may lead to biased interview outcomes. Usually, this prevents the interviewee from freely expressing his/her life experience story or responses in detail, for the fear of being heard by another attentively-listening member of the
community (Mulung, 2012). The people, including the participants, are also aware that once a story is
told and heard in such event, it also has the likelihood of being retold to another member and
continues until it becomes public knowledge in the community (Mulung 2012).

My personal observations and experiences among communities with whom I have worked in PNG
also confirms the likelihood of intrusions and ‘getting lost’ in the processes of interview in this kind
of social research. In this study, to ease the community’s curiosity and to further avoid a likely
compromise in the quality of data from such a situation, I developed two strategies to counter these
challenges. These strategies are discussed in the following sub-sections.

3.2.5.6.1 Initial communication strategies

Using an initial communication strategy, as noted in Liu (2010) and Mulung (2012), was an important
approach to begin my fieldwork in a community, taking advantage of the opportunity to make earlier
announcements of my intended visit for the group meetings. During these meetings I introduced
myself, and explained what I was doing in the community. During these meetings I also had the
opportunity to clarify issues where people required explanations. Through this processes, I developed
certainty and trust within these communities and grounded myself amongst them, prior to
conducting the interviews. This strategy proved effective and I was given permission by other
community members to conduct the interviews among their groups. Most of the household interviews
took place immediately after the group meetings. However, for those community members who could
not attend and others who could not be interviewed due to intrusions, I organised follow-up interviews
(with participant consent) at the convenience of the participant. Usually, a couple of days’ notice was
required and we met in places such as gardens, cash crop blocks, roadsides or other such locations;
anywhere with an environment conducive for an uninterrupted interview to take place.

For the household (husband and wife) survey, I adopted a similar strategy to that used by Liu (2010)
and Mulung (2012), where interviews were conducted at the family homes. Usually, the best timing
for these interviews was mid-morning (9–11am) or early afternoon (2–4pm). During these times,
other members of the community were already occupied with their usual daily activities (gardening,
fishing or hunting), or otherwise away from the household. The use of personal mobile
communication played an important role in making arrangements for this kind of meeting; when the
participants were ready, they called me to organise a time for interview. Depending on the proximity
to where I was based and convenience of accessing locations, it usually took between a day or two or,
less often, a few hours. For example, in East New Britain and Western Province, attending interviews

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1 This view was shared by other PNG PhD students at ANU with whom I studied, and who confirmed
from their own experience that these typical behaviours of PNG rural communities can lead to
interview responses becoming the subject of gossip, sometimes bringing negative outcomes.
took some hours because of good road networks and transport systems while in East Sepik Province, it took a few days because interview locations were more isolated and could only be reached by walking long distances.

3.2.5.6.2 Ethical considerations

Ethical requirements are of fundamental importance to research conducted at Australian universities, because the study involves scrutiny of people’s life and behaviour. As noted in (Harsanyi 1980), ethics are important for two purposes. The first concern is the question of what one should do to have a good life from his/her own personal point of view. This is referred to as the question of prudence value (Harsanyi 1980). The second consideration is a concern from a moral point of view and it is referred to as the question of morality (Harsanyi 1980).

In this context, I took the full responsibility in conducting this research. Both from a moral and prudence point of view, I was aware and mindful of participants’ engagement in the study, and that participation should not in any way affect those who were involved in this study. I sought and received ethics approval for my research under ANU Research Protocol No. 2011/237. The Australian National University Human Ethics Committee, as an independent third party, approved this protocol. At the centre of my ethical approach was the principle that I would not undermine or put anyone of my research participants at risk, cause undue stress or negative implications in whatever way, as a result of my research activity.

3.3 Research methods and fieldwork procedures

In this study, a number of research approaches were used in the process of collecting data relevant to the research questions. These include document reviews, pre-data identification and categorisation of data, devising a sampling strategy, conducting fieldwork studies, executing fieldwork procedures and analysing the data collected. Each of these methods and procedures are described in the following sections.

3.3.1 Research review and pre-data identification

The initial stages of data collection began with a review of the existing literature relevant to PNG leadership decision approaches in resource-based development contexts. This was done in an ongoing way that provided me with a better understanding of the historical, cultural, social, economic, political
and environmental contexts of the areas in which the study communities are located. The study reviewed working papers, reports and government and corporate documents obtained from the government and private agencies such as the PNG Forest Authority, the Agriculture and Livestock Department and Ok Tedi Mining Limited. Other documents and legal guidelines for resource access and development were used in the analysis of the evolution of the community-level leadership concept within a resource development context.

Books, theses, conference proceedings and publications produced by regional and national academic institutions (universities in Australia, PNG and elsewhere), community organisations and the Provincial and District offices, were also consulted. The ANU library, the PNG University of Natural Resources and Environment’s library, and Provincial and District offices held detailed information on the historical and political background of the regions, as well as the three case study societies. The provincial governments of each of the three provinces studied provided access to the economic development plans and environmental planning documents for each of the projects in this study. Online blogs maintained by Papua New Guineans and organisations and daily national newspapers (*PNG Post-Courier and The National*) provided information about the current PNG affairs of culture as well as ongoing contravention of human and indigenous issues in the country.

Among other considerations, the primary focus of ongoing literature review (apart from the main literature review in Chapter 2) was to identify and categorise prominent themes emerging from the leadership issues and resource development outcomes in PNG. At the same time, the process enabled the development of field survey instruments including the sampling strategy for collecting relevant data.

### 3.3.2 Purposeful sampling strategy

The study considered number of commonly-used qualitative sampling strategies including purposive sampling, snowball or chain referral sampling, and purposeful sampling (Charmaz 1994; Chase 2005; Liu 2010; Mulung 2012). With a purposive non-random sample (Glaser and Strauss 1967; Kirk and Miller 1986; Charmaz 1994), the number of people interviewed is considered less important than criteria used to select them. Instead, the characteristics of individuals are used as the basis of selections, most often chosen to reflect the diversity and breath of the sample population (Glaser and Strauss 1967; Glaser 1992).

A suitable approach to use in this sampling strategy was ‘theoretical sampling’ developed from the grounded theory approach (Glaser and Strauss 1967; Glaser 1992). The principle of grounded theory deals with iterative processes; involving repeated sampling, collection and analysis of data which informs the next stage of the sample design (Glaser and Strauss 1967; Strauss and Corbin 1998), until
‘theoretical saturation’ is reached; that is, no new ideas or theories emerging from the participants. However, purposive sampling is very useful for situations where the researcher needs to reach a targeted sample population quickly and where sampling for proportionality is not the primary concern (Glaser and Strauss 1967; Strauss and Corbin 1998). With this sampling approach, the researcher is likely to get the opinions of their target population; however, subgroups in the population that are more readily accessible may be overweighted (Glaser and Strauss 1967; Strauss and Corbin 1998; Punch 2005).

The snowball or chain referral sampling as described by Biernacki and Waldorf (1981) is a strategy that has been widely used in qualitative sociological research. This strategy yields a study sample through referrals made among people who meet the criteria for inclusion in the study. This strategy is more applicable when a researcher is unable to reach or have access to the target population (Biernacki and Waldorf 1981). Furthermore, it is applicable when the focus of study is on a sensitive issue, possibly concerning a relatively private matter and thus requires the knowledge of insiders to locate people for study (Biernacki and Waldorf 1981; Punch 2005). However, its disadvantage is that the variation in the sample may be limited because it consists of informants who belong to the networks of the index cases. This is why it is important to have at least two different additional entries in the community (Biernacki and Waldorf 1981). However, these two strategies are considered inappropriate for this study. This is because the researcher’s purpose is to have access to information-rich cases (data) from which he had previous engagement with the community (participants) prior to this study.

On this understanding, I used the purposeful sampling strategy suggested by (Patton 1990; Glaser 1992; Maxwell 1996; Flick 2000; Patton 2002) as the basis for collecting survey data. The decision to adopt this sampling strategy is based on the nature and the purpose of the study. The purpose of the study, as described by (Maxwell 1996), is to uncover and understand the underlying meanings of participants (in this case, case study communities). This is achieved through the study of events, situations, actions, understanding how participants perceive and comprehend particular contexts within which their communities act, and what influences these contexts have on their decisions. In this context, the research focuses on how communities employ leadership approaches and decision-making processes in their communities to accomplish sharing of development benefits. Patton (1990) and Maxwell (1996) also argue that purposeful sampling is appropriate for logic and value of the purpose of the selections of information-rich cases for an in-depth analysis.

Information-rich cases, as described by (Patton 2002; Reeves 1996; Punch 2005) are those from which one is able to learn a great deal about issues of central importance to the purpose of the research. Thus, the aim of this sampling strategy is to choose information-rich cases (data) whose study will illuminate understanding of the questions investigated in the study inquiry (Patton 2002).
Furthermore, Maxwell (1996) argues that in a qualitative study, a purposeful sampling is a strategy where particular settings, person or events are selected deliberately in order to provide important information that cannot be achieved as well from other sources. However, the disadvantage of a purposeful sampling strategy is that the logic of purposeful sampling is often misjudged on the basis of logic, purpose and recommended sample size of probability sampling (Patton 2002). Alternatively, as for all other qualitative studies, the sample should be given fair judgement on the basis of the purpose, and justification for the study and the sampling strategy used to accomplish the purpose of the study.

3.3.2.1 Sample size

The sample size for this study was decided based on the suggestions put forward by (Glaser and Strauss 1967; Strauss and Corbin 1998; Charmaz 1994) for conducting qualitative research studies. The primary aim is to generate in-depth data that can illuminate patterns, concepts, categories, properties and dimensions of the given phenomena (Glaser and Strauss 1967; Strauss and Corbin 1998; Charmaz, 1994). The second consideration is the theoretical saturation of data. According to Glaser and Strauss (1967 and Strauss and Corbin (1998), theoretical data saturation condition is a stage in data gathering (interviews) where: no new or relevant data seem to emerge regarding a category; the category is well developed in terms of its properties and dimensions demonstrating variation; and the relationships among categories are well established and validated. In other words, the researcher continues expanding the sample size until data collection reveals no new data.

Combining the theoretical principle of qualitative research (Patton, 1990; Glaser and Strauss 1967; Strauss and Corbin 1998; Maxwell 1996; Krueger et al. 2000) and with opinion from my supervisory panel, some of whom have a depth of experience in similar work in PNG, I concluded that an average of 20 interviewees/participants in each of the selected case study units of analysis was adequate. A contingency plan was also considered to recruit additional participants beyond 20 in the event that theoretical data saturation stage was not achieved. In the actual survey, the contingency plan was not implemented because the theoretical data saturation point was achieved. I was unable to find new data emerging after conducting 12 to 17 interviews in my case study communities.

A similar observation was also recorded by Mulung (2012), who used a similar case study approach. In fact, he interviewed 20 to 25 participants instead of 20 in each of the communities because he could not turn away those who had made themselves available for interviews. For many participants, this was a new experience and they wanted to be included in the survey.
3.3.2.2 Participant interview details

In this research, the central units of analyses were the communities and individual households. Participants included men, women and young people from the same community and people who actively contribute to decision-making processes in their communities. Men were mainly representatives of the clan and householders, while women and youth represented community group organisations in the community. The selection of men, women and youth respondents was based on the cultural taboos and restrictions such that only a man speaks on behalf of his clan and family while women and youth listen (Barker and Ietjen 1990; Holzknecht 1996). This means there are boundaries and restrictions requiring respect, as to what women, youth and men would speak about in such meetings and interviews.

3.3.2.3 Participant selection

Community and household participants in each of the study regions were selected using a number of strategies. Initially, pre-assessment surveys were conducted to identify and locate relevant communities and participants to be interviewed one week or so prior to my visit. This involved visits to provincial and district administration offices as well as seeking assistance from other prominent community leaders in locating suitable communities. The communities selected were mainly those that appeared to be affected by leadership issues in their communities. The issues include poor control and management of community resources or livelihood assets, unequal sharing of development benefits, unpopular decision-making processes, lack of appropriate community behaviours and attitudes involved in the delivery of services to communities and achieving better community outcomes.

The communities of Western and East Sepik provinces were selected based on a previous pilot study that indicated that there was evidence of leadership issues related to natural resource development in the communities. My discussions with pilot study participants confirmed such leadership issues existed in these two regions. For the communities of East New Britain Province, Liaga, Manapki and Nabata were selected based on information provided by District Administrators and prominent local leaders. My discussion with the former East New Britain Provincial Administrator and the current Manager of the Kairak Integrated Training Centre, provided evidence of leadership issues in the area.

In every community, before conducting interviews, I consulted with the Local Level Government (LLG) Presidents to explain the purpose of my research and to seek approval to contact the Ward Councilors of each of the communities I was to visit. The LLG Presidents agreed with the request and arrangements were made through community leaders to meet with the Councilors and other senior members of the community.
During these community meetings, the Councilors and senior community members assisted me in selecting 20 households from their villages to be interviewed. Participants in the household survey were randomly selected by drawing their names from a box containing the name of all households in the community. This process was appropriate as the updated village or ward common rolls were available at the time of this study. This further helped to minimize any issues relating to bias that may have occurred if I were just to hand picking the household participants.

3.3.2.4 Data variables and parameters for collection

This section describes the data variables and data collection parameters identified and categorised for the different types of data both qualitative and quantitative were collected. These were drawn from the PNG decision making environment model described in Figure 3.3. The quantitative data collected involved similar variables to those noted in Bainton (2006, 2008), Liu (2010) and Mulung (2012), which included subsistence food production systems and strategies, amount of money earned and spent, consumable and non-consumable goods produced and exchanged for analysing livelihoods strategies. Qualitative data collected involved social and cultural systems and processes, behaviours and attitudes, households’ exchanges, observations and interviews, community risks management strategies, reports and other documents, socio-cultural beliefs and underlying stories and social and cultural dynamics within the communities. Other qualitative data collected was in the form of parts of their speeches and story-telling conversations. These are discussed in detail in the data analysis section in Section 3.5.

The main data variables collected in this study were heterogeneous in nature and were generally associated with personal motives, perceived interests in social, cultural, economic and environmental value and capital and, extending and maintaining social and cultural relationships. These factors define the parameter range in which data variables for this study were considered and collected for analysis. The method of household interviews, assessments of leadership approaches, decision-making processes and resources sharing criteria and the processes involved in data collection are described in Section 3.5. For the purpose of assessing leadership and decision-making processes, the study included a number of strategies, including behaviour in both the subsistence and cash income production strategies, community food production, consumption, distribution, household exchanges, cash earning opportunities and expenditure patterns.
3.4 Fieldwork

The fieldwork was carried out in two phases. The first fieldwork phase involved a pilot study and this was carried out between the months of June and September 2011. The second phase involved a series of extended fieldwork periods of up to more than two months' duration at each of the three case study sites between April and October 2012. Specific details for each of the fieldwork sites are described below.

3.4.1 Pilot study

Between June and September, 2011, a pilot study was conducted in the Ok Tedi area, Western Province, and Wosera area of East Sepik Province. Included in this survey were Migalsim/Bultem, Dangei 2, Bige communities, Ok Tedi Mining Limited (OTML) and Ok Tedi Fly River Development Program (OTFRDP) staff and others including government extension officers in Western Province; and Bapmuma, Nungwaia and Konabandu villages in Wosera area in East Sepik Province. The purpose of conducting a pilot study was: firstly, to test the social survey methods for any shortcomings that might have been overlooked, and; secondly, to gain an initial feel for, and gain confidence in, conducting such a research enquiry in preparation for a much longer fieldwork period.

A revised field survey instrument resulting from this process, and used later in the field data collection work, is attached as Appendix 1. The social survey questionnaire was tested purposely to assess how respondents coped with the questions in terms of translation and interpretation of the questionnaire. This included an assessment of the accuracy in translation of meaning, level of difficulty or fluency in the interpretation of questions by both the participants and myself, in terms of administering questions. The questions were prepared in English and then translated into the lingua franca, Tok Pisin, which was then translated into the local language and replies translated back into English.

The primary aim of this process was to assess whether or not questions were understood as intended, without ambiguity, and avoid difficulties often associated with language problems, literacy issues, cultural issues and unforeseen ethical issues. The secondary aim of the pilot study was to assist with planning for the subsequent and longer fieldwork periods. For example, I needed to know how long an interview would take, as well as what other equipment and interview instruments would be required for the fieldwork. Furthermore, if there was an oversight regarding ethical issues not adequately addressed prior to commencement of the research, I would use the opportunity to rectify this in addition to building necessary confidence and rapport with communities using this kind of interaction.
3.4.2 Major fieldwork

Major Field work was conducted between April and October, 2012. It began in East Britain Province in April, followed by East Sepik Province in between months of May and June. The Western Province part was conducted in June. Apart from the main visits, repeated trips were made particularly to East New Britain and East Sepik, as I required more clarifications and explanations. Details of this field trip description is provided in Appendix item No. 2.

3.5 Fieldwork data collection

An initial information session was held for each community sampled. Following this, three main strategies were used to collect data. This were community groups meetings, household interviews and participant observations. Detailed descriptions of fieldwork and data collection procedures are provided in Appendix item No. 3.

3.5.1 Community group meetings

Information sessions were initially held to facilitate introduction and explain to the community who I was; what I was doing, my research study and what I expected from them. I took this opportunity to learn and access general community perspectives on worldviews about my study topic. This focused on seeking answers to:

2. What types of leaders, community institutional structures, leaders' motivations and leadership styles and behaviours exist in these communities?

3. What factors influence livelihood systems (including livelihood strategies, capital assets, institutional processes and the outcomes) of these communities?

4. How do the underlying social, cultural, economic and environmental beliefs affect and form attitudes and views about leadership and decision-making processes in the communities?

5. How do these attitudes and views affect leadership approaches in the sharing and distribution of resource development benefits in the communities?

In this study, the main focus of the group meetings was to build an understanding, from their stories, how the matters of everyday life affected and influenced their resource use and development decisions. The main purpose of conducting community meetings was to gather the community views about particular aspects of leadership and decision-making processes and their general views on underlying social, economic and environmental and cultural and economic systems operating within
the case study regions. The second purpose was to observe the dynamics of group behaviour in terms of attitudes about leadership approaches and other livelihood activities within particular case study regions. Community group meetings enabled me to verify and validate data through triangulation. Group meetings were open to everyone, particularly to interested members of the community and were usually conducted near the community leader’s residence or at a designated meeting area within the community space. Men, women, youth and children attended these meetings. The same themes raised in the interview questionnaires were also used as foci for deliberation at group meetings. My role included chairing the meeting and controlling the direction of the discussions. All conversations and discussions were recorded using a digital voice recorder.

The study included nine groups, involving 282 people who attending the group meetings (see Table 3.1), during which I explained the purpose of my research and collected responses to a number of questions posed to participants. It took approximately one hour to conduct each community meeting. The fact that it took about an hour was due to: firstly, I was well aware of the regions of studies as I was engaged with these regions prior to taking up the study; secondly, because of my familiarity village leaders appropriately assisted me out; and finally, my pilot study also assisted me to improve on my timing considering the fact that communities have their own routine activities in the communities. During these meetings and in household interviews I explained clearly to the people that participation was entirely voluntary and that information provided during the interview would be kept confidential and would be used only for my PhD work. Further, I explained that individual questionnaires used in the survey would be stored securely and all data would be entered for computer analysis. I made it clear to communities that the names of individuals and households would not be identified in the thesis or other publications. I also pledged to return to the community after the survey, to report back on initial findings with interested community members.

3.5.2 Household interviews

In addition to community group meetings, household interviews were also conducted to access perspectives from individuals and family groups. The questions raised in group meetings were also raised in household interviews. The main focus in the household interviews was to re-establish, from their stories, the relationship between leadership at various levels and the matters of everyday life at the household level.

I made daily visits to host communities and conducted semi-structured interviews based on a short standardized quantitative survey instrument I had prepared. The survey instrument (attached as Appendix 1) formed the basis of interview discussions. Before I commenced the actual interview, I reiterated that I was a researcher and the purpose of the interview was for my PhD research project.
This was done with the aim of eliminating any unintentional hopes and, secondly, for the participants to feel at ease about my transparent engagement with them. The interview survey recorded data on basic information like demography, education, resource base and accessibility to under basic services in the communities. This data provided basic information on the social, economic and environmental conditions of the communities. The next category of data set concerned land ownership and decision-making processes, production (food, clothing, and shelter), consumption and exchange activity strategies, livelihood outcomes, social relationships, attitudes and perceptions in terms of the adoption of new innovations, vulnerability and security issues.

Questions were not always asked in the order that they appear in the questionnaire, but rather, the order depended on how participants conversed. Survey questions usually were interspersed in general conversation. In responding to and iteration of questions, participants were not discouraged from digressing to related issues or other important matters that had arisen earlier in the discussion. This often uncovered new information that would not have been revealed through the standardised survey and so provided insights about what people themselves felt were important issues. If I felt that they had completed telling a story on a particular sub-theme, I would then introduce another one not discussed earlier.

The interview would continue in this manner until all the questions in the interview questionnaire had been asked. The process continued for each household interviewed until there was no new information emerging. This stage in the data collection process is termed data saturation point (Glaser and Strauss 1967; Strauss and Corbin, 1998) From my fieldwork experience, data saturation stage was reached anywhere between the 12th and 17th interview for a sample size of 20 participants. Towards the end of every interview, I summarised the discussions and general findings and sought the interviewee’s feedback on my summary. This process helped ensure the data collected were accurate reflections of the situation and discussions as well as concerns of the farmers and their communities. In general, each interview took between 45 minutes and two hours. This allowed time for three to four interviews per day.

### 3.5.3 Participant observations

Participant observation is a research method that enables a researcher to become closely acquainted with a community and the day-to-day activities of its members, through intensive engagement as a participant (DeWalt and DeWalt 2002; Bell and Lyall 2005). Being there and participating in daily activities is what allows a researcher to distinguish the difference between what people say they do (e.g., in interviews and focus groups), and what they actually do (Guba and Lincoln 1994; Bell 2005)
informal unstructured discussions in every-day casual conversations, was another method for making general observations (Angrosino 2005).

In the context of this research, participant observation involved being present and observing daily internal meetings and fieldtrips in community consultation and engagement programs in the three study communities, and helping out with other tasks being performed by communities. I took part in three Village Planning Committees (VPC) and local trust meetings directly related to the development implementation process of formal negotiation between the communities and the stakeholders involved in these projects. Participant observation also involved talking to people, and taking part in the daily activities of the case study communities’ household in which I was staying. I participated in their social gatherings, the most prominent of which were bride prices and funerals and visiting relatives.

Participant observation gave me a broader understanding of the communities’ cultural context and the nuances that only become apparent by being there for an extended period of time and by participating in activities. During this observation period, I always had a small notebook in which I wrote notes that were of interest to the research questions I was investigating. In the evenings, I made detailed descriptive notes of observations, especially on internal community meetings and their every-day life. I also wrote notes about how to adapt methodological strategies of enquiry to the specific challenges encountered, analytical notes as well as more self-reflective notes about personal biases and challenges. This was crucial for collating relevant data required for the thesis (Guba and Lincoln 1994; Mulung 2012).

3.6 Data analysis methods

A number of strategies were adopted as guides for me in this study. These strategies relate to data managing, processing, analysing and presenting. These strategies have been organised and presented in two phases. Phase one involves the management and pre-analysis of the data in the field and phase two contains the detail analysis of data after the fieldwork.

3.6.1 Data analysis in the field

Phase one of the data analysis involved data management strategies applied during the fieldwork to safeguard data collected. These include techniques used in pre-analysing and managing data during and after the fieldwork. For example, all except two interviews were transcribed using a recording sheet because these two participants preferred this method so their interviews were transcribed in full. Once interviews had been transcribed, they were rephrased or read out to the participants for
confirmation. In the two cases where the interviews were not transcribed, a digital recorder was used to record the discussions and these were later transcribed and the notes were sent to the participants for their comments. Of all participants interviewed, only one participant (who took part in a digitally recorded interview) requested to make additional comments and I travelled to have a follow-up discussion with him. This gave me an opportunity to reorganise my approach so that I was familiar with what to expect in my next interview. To avoid such issues in the future I made sure to use questions like ‘Is there anything else we may have missed? ‘Is there anything else you may want to discuss?’ This then continued throughout the entire study period.

Pre-analysis of the data was carried out while still in the field, which meant that preliminary data analysis began during the interview through the use of follow up questions to discuss previous answers and to assist me understand the participant’s meaning (Feldman 1995; Kvale 1996; Flick 2000; Patton 2002). A second analysis stage occurred through the use of reflections written as soon after the interview as possible. These reflections recorded the physical aspects of the interview context as well as my initial thoughts on the interviewee’s reports, explanations and views. These reflections continued through the transcribing process. My reflections of these interviews were later used to explore the issues that had emerged from earlier interviews. The respondents themselves and other community members that I had requested to assist during the interviews assisted this process.

This process usually occurred in the evenings, nights and mornings for the East Sepik communities, and on the next day for East New Britain Province and Western Province communities. In the process, preliminary emerging themes were coded manually, that is, the themes that appeared as being significant were given a name-code and grouped according to similar ideas within and across interviews. The name-codes were taken predominantly from the interview transcription, although they were also inspired from the earlier literature review. The codes began the process of describing the experiences, perceptions and responses discussed by the participants as interpreted by myself. In some circumstances codes were combined or separated. This occurred as more interviews were coded and the sections of quotes were added. As new interviews were conducted, transcribed and analysed, it was necessary to go back to earlier interviews and re-analyse new themes that emerged. This gave me confidence to focus and make the necessary judgments to ensure there were new or similar themes emerging from new interviews. The pre-emerging themes analysed in the field were then further analysed as presented in the next section.

3.6.2 Post-fieldwork data analysis

Phase two of the data analysis stage describes the processes involved in the analyses of pre-emerging themes coded during the fieldwork analysis discussed in phase one. This analysis was concluded after
the fieldwork study. For this analysis the following processes were used: first, a data analysis framework was developed; second, data were organised and sorted; third, computer records were created; fourth, developing trends noted; and fifth, data display, verification and conclusion. Each of these processes is demonstrated in Figure 3.3 and discussed in further detail below.

![Diagram of the five processes in data analysis](image)

**Figure 3.4: Relationship between the five processes in the non-linear qualitative data analysis model developed for this study.**

Source: Adapted from Seidel 1998; Miles and Huberman 1994

### 3.6.2.1 Data analysis framework

To assist in analysing this data, two qualitative data analysis (QDA) frameworks were developed. The first was a general QDA process and the second a thematic network framework. The QDA framework was developed to capture the five non-linear processes involved in data analysis from the time data was collected in the field to the final analysis stage. The thematic network was created after the fieldwork to visualise the emerging common themes in the study.

The QDA framework was developed based on Seidel (1998) and Miles and Huberman (1994) propositions that it involve non-linear or cyclic processes for analysis. For example, Seidel (1998) describes data analysis with three processes including noticing, collecting and thinking as key components for QDA; while Miles and Huberman (1994) describe data analyses as having four continuous interactive cyclic processes throughout the life of a research investigation. These processes involve data collection, reduction, display and conclusion drawing or verification.
Based on Seidel (1998) and Miles and Huberman (1994) propositions, this study adopted five similar cyclic QDA processes. These were: developing data analysis framework, data organising and sorting, creating and keeping records in the computer, making sense of developing trends from the data and displaying and verifying the data. The relevant aspects concerning the methods for data collection method was presented above in Section 3.5.

The analysis involved a non-linear approach following iterative and progressive, recursive and holographic processes. Figure 3.3 shows the five processes in a non-linear data analysis model (and describes the sequential and continuous relationship to each other.

The important aspects of the qualitative data analysis characteristics as described by Seidel (1998) include:

1. Iterative and progressive: The process is iterative and progressive because it is a cycle that keeps repeating. For example, when I was developing the data analysis framework, I was also starting to organise and sort emerging themes in the data. I then created computer records and made sense by assigning meanings and displaying the data for presentation. In principle the process is an infinite cycle.

2. Recursive: The process is recursive because one part calls me back to a previous part. For example, while busily sorting data I would simultaneously start making sense and assigning meanings to emerging themes in the data.

3. Holographic: The process is holographic in that each step in the process contains the entire process. For example, when I first started to develop the data analysis framework, I was already mentally organising, creating and making sense of the data.

With this understanding, in the flowing sections I discuss the five processes of data organising and sorting, creating and keeping records, making sense of the developing trends of the data and displaying, verifying and drawing conclusion from the data.

### 3.6.2.2 Data organising and sorting

With the qualitative data analysis (QDA) processes described above, further analysis of the data took place. In this analysis, a thematic network process described by Attride-Stirling (2001) was used to develop, organise and sort the themes into a thematic network. Because the approach to qualitative data analysis is incredibly diverse and nuanced, Braun and Clark (2006) suggest that a thematic analyses are seen as a foundational method for such study analysis. A sample of the thematic network diagram is illustrated in Figure 3.4. This sample was used for the pilot study analysis. Similar approaches were undertaken for the major fieldwork. The thematic network analysis also observed by
(Loxton et al. 2012) was used to formalise the method of taking the initial key themes from the analysed transcripts and representing them in a structured form. This method allowed the researcher to construct a network of themes that connected basic codes, emerging themes, and central themes that illuminated an overarching theme. The use of a thematic network in itself was not an analysis as such (Loxton et al., 2013), but rather a graphic illustration of the analysis. As also observed in Kepore and Imbum (2006)’s analysis of similar data of their attempt to systematically build an account of what has been discussed and, observed and recorded. They described the first stage of coding as recognizing the codable themes during thematic analysis or getting familiarizing with the data, the next five stages involve generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing report. Thus, generally, six steps were required in their approach. Therefore, this study has used similar principles and processes of thematic analysis and interpret the study data.

![Thematic Network Diagram]

**Figure 3.5: Thematic network of emerging themes in the data analysis.**

Source: adapted from Attride-Stirling (2001).

From these network analyses, main themes were constructed, selected, described and conceptualized against the frameworks as presented in Section 3.2.3 and also described and in Section 2.4.2.
3.6.2.3 Electronic record keeping

The analysed data were then sorted and entered separately into computer folders for each emerging theme of the case study units. Files were created to keep records of the accounts of each of the areas.

3.6.2.4 Developing trends in the data

The recorded and the thematic data provided in Section 3.6.2.2 and 3.6.2.3 were used to generate preliminary assessments to, firstly, develop a general pattern or trends for each community with the summary written as preliminary answers in this thesis. Secondly, such analysis gave an indication if data were likely to be required to verify the trends that developed from the field analysis.

Based on the thematic and recorded data kept electronically, provided in Section 3.6.3 and 3.6.4, I was able to examine and assign meanings of peoples’ words or actions in relation to community leadership practices and decision choices they make to understand their aspirations and motivations. I examined the thematic data that became apparent, which was scrutinised in more thorough and meaningful way. My aim in this process was to: (1) make some type of sense out of each collection relating to the research questions asked in the study, (2) look for pattern and relationships both within a collection, and also across collections responding to research questions proposed in Chapter 1; and, (3) make general discoveries about the phenomena I was researching.

For this processes, I adopted the jigsaw puzzle analogy. After sorting the puzzle pieces into groups, I inspected individual interesting themes to determine how they fit together and form smaller parts of the picture relating to the overall research question. I compared and contrasted each of the data (themes) identified and examined in order to discover similarities and differences. Following that, I built typologies, or found sequences and patterns. From the jigsaw puzzle analogy analysis I was able to visualise the commonalities and differences emerging from the analysed data and to present them as findings in proceeding sections. The grounded theory approached was the appropriate method I used in in this analysis.

In the break down (analysis) of the collected data, initial coding was done by allocating codes to similar data. For example, data relating to leadership modes, livelihoods assets, strategies, vulnerabilities were labelled with different code names. This was basically done in two phases; phase 1 took phase while in the field, and phase 2 occurred at the office at the Australian National University (ANU). This involves use of butcher papers and markers and highlighters to code and label the emerging themes (variables). The excel spread sheets were the tool that help in analysis of the data. The extracts from interviews in the later chapters are provided as modified versions with verifications and rephrasing confirmations received from the participants by restating their response.
Both recorded and raw data collected were used to reconfirm the validity of these responses. This usually was done while in the processes of collecting data, in the evening after collecting the data, and even back at ANU through use of mobile phones to confirm their responses.

3.6.2.5 Data display, verification and conclusion

The final data analysis activity was the displaying, verifying and drawing conclusions from the data. Miles and Huberman (1994) and Feldman (1995) describe data display as organised assembly that permits conclusion drawing and action taking. Looking at data displays assisted me to understand what was happening and informed decisions on what course of action to take next. The data display in this study included narrative texts, matrices or tables, charts and diagrams.

3.6.2.6 Presentation and discussion of results

The key findings relevant to the main research question are presented in Chapters 5 and 6. These were verified within the context of the theoretical frameworks described above, through reference to the relevant literature from studies in PNG and elsewhere, and through triangulation of results within and between case study regions. Based on the findings, the relationships and implications for community leadership modes and decision making processes are discussed in Chapter 7 and conclusions are drawn in Chapter 8.
Chapter 4: Case studies

4.1 Introduction

In this Chapter, I describe the characteristics of the three case study regions relevant to my study, particularly their socio-cultural, economic and natural resource status. Understanding of these contexts sets the basis for the reporting of my research results in Chapters 5 and 6, and the discussions and conclusions in Chapters 7 and 8.

There are three main sections in this Chapter. Section 4.2 describes the general characteristics of the case study regions. It focuses on their social, cultural, political, economic and environmental characteristics. Section 4.3 describes the case study projects and their significance for the livelihoods of the case study communities. Section 4.4 describes resource-related conflicts in the study regions.

4.2 Study region characteristics

This section examines the social, cultural, economic and environmental characteristics of each of the case study regions. The main sources of data for the environmental and socio-economic information presented in this chapter were the: Papua New Guinea Rural Development Handbook (Hanson et al. 2001; the Papua New Guinea Agriculture Handbook (Bourke and Harwood 2009), Nungwaia-Sengo Integrated Agroforestry proposal (East Sepik Provincial Government 2007), the Kairak Palm Oil Development Project Proposal (East New Britain Provincial Government 2009) and the Ok Tedi Fly River Development Program (OTFRDP) (Business Development Plan 2010). Figure 4.1 presents a map of PNG, indicating the case study regions in East Sepik Province (Inset 3), East New Britain Province (Inset 2), and Western Province (Inset 1). In the following section, I describe the general characteristics of these study regions and communities.
Figure 4.1: Map of PNG showing the study sites.

Source: Base mapping supplied by Cartography, Australian National University, College of Asia and the Pacific.

4.2.1 East Sepik Province – Wosera

The Wosera case study region is situated about 160 kilometres south of Wewak, the Provincial Headquarters of East Sepik Province. Research focused on three communities: Ugutakua, Jipakim and Numamaka (Figure 4.2). The study region includes two linguistic groups, Wosera-Kwasingua and Wosera-Abelam.
4.2.1.1 Description of case study region

The planned agroforestry development area in the Wosera-Gawi region covers an estimated area of 800 km² (Curry and Koczberski 1998), with the province’s largest centre, Maprik, in its north. Relative to other parts of PNG, the Wosera-Gawi area is considered poor, and one of the least developed districts in PNG. Per capita annual income in the Wosera region was as low as PGK24 in 1989 (Curry 1997; the corresponding national and provincial figures at around that time were PGK520 and PGK320, respectively (1993 data; PGK1= AUD1.51). While there is limited regional data for this area, the 2009 provincial data for East Sepik Province suggests that per capita weekly income was around PGK10-150 per household (Bourke and Harwood 2009). Anderson (2015) report that average household income per year is between PGK3,000 and PGK 4,200 in rural communities (2015 data; PGK1= AUD2.08). Income depends on the type of cash crops and related crops available to a community.
The region is one of the most densely settled rural lowland areas in PNG, with densities ranging from 60–200 persons per square kilometer (Lea and Weinard 1971; Curry and Koczberski 1998). These densities are deemed very high for an economy base on swidden agriculture (Lea and Weinard 1971; Curry and Koczberski 1998).

4.2.1.2 Population and administration
The study was conducted in the North Wosera Local Level Government (NWLLG) area of the Wosera-Gawi District. The Wosera-Gawi District comprises four Local Level Governments (LLGs): North and South Wosera, Burui-Kunai and Gawi. In all, the area has 13,397 households with a total population of 63,997 (GoPNG, 2011). The district is represented by one elected national Member of Parliament (MP), four LLG elected Presidents, and over 140 elected ward councilors. The District is administered by the district administrator, assisted by four LLG managers. The presidents and ward members are the political representatives while the LLG managers are the administrative officers of the provincial and national government. Each LLG manages a population average of 15,000 people with average of more than 2,000 households.

4.2.1.3 Demography and language groups
Although two separate linguistics groups, the Wosera Abelam and Wosera Kwosingua, are identified in Figure 4.2, both groups have similar characteristics in terms of customs and behaviours.

**Numamaka community**
The Numamaka is a secondary beneficiary community to the proposed project, and is situated approximately 60 km from the project site. Consequently, the proposed project does not directly impact on land owned by the community members. The community is a clan-based patrilineal society that consists of three main clans. The three clans, Kuian, Mulilip and Wama (names that relate to common birds or totem), have a total population of about 512 people.

**Ugutakua community**
The Ugutakua community is one of the principle land owners of the proposed integrated agroforestry project area. It is situated in the North Wosera LLG area. The community is a clan-based patrilineal society that consists of eight main clans. The clans - Jambakim, Kopiko, Numakua, Penakor, Kualik, Mokamo, Singlako and Wiakukim - have a total population of 440 people.
Jipakim community
The Jipakim community are also principle land owners of the proposed integrated agroforestry project area, situated approximately 20km from the project site. Its social structure and clan groups are those found in Ugutakua, but the community is much smaller, with a total population of 82 people.

4.2.1.4 Access to services and economy
The Numamaka community, inhabiting the Torricelli Range foothills to the south west of the Prince Alexander Mountains, have a journey of a few hours to reach the nearest service centre at Maprik. The Ugutakua and Jipakim communities in the north are very remote, and require a day’s travel. The Sepik Highway runs north of the district border, from Maprik to Dreikikir, and connects to a network of rural roads that cover most areas in the inlands hills. There is also a well-maintained road from Maprik to Pagwi, on the Sepik River. The river communities travel to Pagwi by canoe and boat and further by road to Maprik and Wewak (Hanson et al., 2001; Bakat 2004).

The Ugutakua and Jipakim communities previously had access to a Health Centre at Duniningi, which they could reach in 15-20 minutes. However, this service is no longer in operation. Now they walk for approximately four hours to the Sub-Health Centre at Kaugia. For Numamaka community, the Kaugia Health Centre is about 45 minutes’ walk from their village. For primary level education, the communities are serviced by Kaugia Primary School for Numamaka children and Kwasingian Primary School for Ugutakua and Jipakim children. These schools are all within walking distances, requiring less than an hour’s walk. However, there is no secondary school available within daily commuting range for three communities. The nearest high schools are located Burui in Wosera-Gawi District and the others, Maprik and Brukam in Maprik District which is about one day’s walk.

Income
Estimated provincial annual cash income per household per year (1990-1995 data) was around PGK101-150 (Bourke and Harwood 2009). On the floodplain of the Wosera district, moderate incomes are derived from the sale of cocoa, coffee and fresh food. People in the remainder of the district earn very low income to low incomes from minor sales of dried cocoa and coffee in the hills, and betel nut, fish and cocoa in the Sepik Valley (Hanson et al. 2001).
Subsistence agriculture

Agriculture on the Wosera floodplain is characterised by high intensity yam cultivation. There are 3–5 consecutive plantings before fallow periods of 1–4 years. Production is maintained through the use of drainage and mounding. People in the hills west of the Torricelli Range cultivate low intensity yam gardens. Sago is the most important food in the Sepik Valley and on the northern fall of the Central Range, supplemented by low intensity mixed staple or taro gardens (Hanson et al. 2001; Bourke and Harwood 2009).

4.2.2 East New Britain Province – Gazelle

Figure 4.3: Location of case study region and communities in East New Britain Province

Notes: Area corresponds to Inset 2 of Figure 4.1, and illustrates the Tolai and Baining linguistic groups studied.

Source: Base mapping supplied by Cartography, Australian National University, College of Asia Pacific Studies.
The Gazelle case study region is in the north of East New Britain Province (ENBP), and comprised three case study villages - Liaga, Manapki and Nabata. Figure 4.3 presents the case study region and locations of the villages.

### 4.2.2.1 Description of case study region
Gazelle District is the focus of this case study. It is one of the four districts in ENBP. It comprises five LLGs: Central Gazelle, Inland Baining, Lassul Baining, Livuan Reimber and Vunadidir Toma. The region is located in the north of the province, and encompasses the Baining Mountains, valleys of Kerevat and Warangoi rivers, numerous smaller rivers and narrow coastal plains. In the northeast of the Gazelle Peninsula are fertile hills and plains that surround the Rabaul volcanoes. The area is densely settled and well developed. Past volcanic eruptions have covered the area in the fertile volcano ash, but the 1994 eruptions caused widespread damaged to infrastructure, cash crops and water supplies. Altitude varies from sea level to over 2000m on Mt Ulawun, Mt Bamus and Mt Berurumea. The highest altitude at which agriculture is practised is 1200m on the Mamusi Plateau and in the Baining Mountains. The average annual rainfall varies from 2000mm near Kokopo to over 5000mm on the south coast. There are moderate dry seasons in the northeast of the Gazelle Peninsula (Corbin, 1973; ENBPG Directory 2013).

### 4.2.2.2 Population and administration
The Gazelle District has more than 23,000 households with a population of over 107,000 people (National Census, 2011), an increase of 19 percent in the decade to 2000 (2000 Census). An elected national Member of Parliament (MP), five LLG Presidents, and 130 ward councilors represent or manage the district. The district is administered by the District Administrator and assisted by five LLG managers. Each LLG manages a population of more than 20,000 people with the exception of Lassul, which has less than 12,000 people (ENBPG 2009).

### 4.2.2.3 Demography and language groups
The communities investigated in this study are located in the Inland Baining and Livuan-Reimber LLG areas of the Gazelle District. Liaga and Nabata are part of the indigenous Baining and Tolai groups, respectively, while Manapki comprises mixed ethnic groups across. Figure 4.3 shows the approximate locations of the case study communities. These communities are part of the region impacted by the Kairak Oil Palm Development Project (KOPDP).
Liaga community
The community of Liaga comprises of a number of hamlets which are scattered throughout the valleys and mountains of the Baining area. The community belongs to the Baining tribe, one of five main tribal groups in East New Britain Province. The tribe comprises five included in this study. The Kairak main clan is further categorised into three sub-clans, Sukparmatka, Avir and Kopki. The community of Liaga is part of sub-clan of Avir, located within the Inland Baining LLG in the valleys and foothills of Baining Mountain ranges. The study community is part of the area impacted on by the oil palm development in the region. Its social structure consists of patrilineal lineages, with a total population of 644 people (ENBPG 2009).

Manapki Community
Manapki community is situated in the Inland Baining LLG area. The community is comprised entirely of settlers from various parts of PNG, and therefore of mixed ethnic groups from Morobe, Sepik, Tolai, Watom Island and Madang, with a total population of 700 people (ENBPG 2009). The re-settlement scheme in this area came about as result of the need for labour to work in the plantation blocks in early 1980s (ENBP 2009). The East New Britain Provincial Government negotiated with the Baining people to make available land as re-settlement blocks for hired laborers to live work for the plantations. My personal communications with the participants also confirmed that most of the settlers came to work for plantation estates. Its social structure includes both patrilineal and matrilineal lineages. The community is part of area impacted on by the oil palm development project.

Nabata Community
The community of Nabata comprises 260 households, which are scattered throughout the foothills and ridges along the North Coast Road. Although not part of the immediate oil palm impact communities, it is likely to be impacted on by the development opportunities arising from the project. The community belongs to the Tolai tribe, another of the five main tribal groups of East New Britain Province. It was difficult to establish how many clans exist in this community. When questions about clan composition and structures were raised, people had difficulty explaining the systems that exist in their community. Many of the respondents could not describe their relationships; instead, they made references to their matrilineal lineages. The community’s social structure consists of matrilineal lineages, and it has a total population of 432 people (ENBPG 2009).

4.2.2.4 Access to services and economy
People on the mountain ridges, along the coast of Ataliklikun Bay, and in the Kerevat and Warangoi valleys have less than one hour’s travel to reach Kokopo, which is the main town centre. People in the
Baining Mountains require less than four hour’s travel, while those on the north and west coasts require 4–8 hours travel to reach Kokopo. There is a network of sealed roads on the volcanic plains and hills. Gravel surfaced roads connect Lassul on the north coast to the western Baining Mountains (Hanson et al. 2001; ENBPG, 2009).

Health services within the proximity to Manapki and Liaga are Kerevat Hospital and Vudal Health Centre. The PNG University of Natural Resources and Environment, Kerevat National High School and Utmei High School are located within 30 minutes by car from these two communities. Liaga hosts a primary school but with classrooms and other school infrastructure in poor condition, while the nearest primary school to Manapki is an hour walk to the main road along the Kerevat-Vunapalading Highway. Nabata is located about 15 km away from the Nonga Base Hospital, which is the main Provincial Hospital, located in Rabaul. The nearest primary school for Nabata are, Vunaraito and Ramalmal Primary Schools. Each of them is within walking distance. The nearest High School is Malaguna Technical High School in Rabaul, which is about an hour drive.

**Income**

The estimated annual provincial rural income per household is between PGK201-300 (Bourke and Harwood 2009). For working households whom some of them live in the villages, monthly average wage at the provincial rate is about PGK240 per month (UN-Habitat 2010). However, these range from high to very low on the volcanic plains and hills, on the coast of Ataliklikun Bay and in the lower Kerevat and Warangoi valleys, and are derived from the sale of cocoa, betel nut, fresh food and copra. People in the Baining Mountains earn low incomes from the sale of fresh food, while those on the north and west coasts earn very low incomes from minor sales of copra, cocoa and fresh food. Other sources of income in the district are derived from small-scale enterprises such as cocoa fermenting, trade stores, construction and also from wage employment from businesses and plantation owners. Small numbers of people in the Baining Mountains receive wages and royalties from the forestry operations (Hanson et al. 2001).

**Subsistence agriculture**

Agriculture on the volcanic plains and hills is dominated by high intensity banana cultivation. Triploid bananas can produce for 20 years if they are managed properly. People make two consecutive plantings before a fallow period of 5–10 years. Coconut is also an important food. Agriculture in the area to the southwest is similar, but is less intensive. People in the Baining, and on the north and west coasts, cultivate low intensive mixed staple gardens (Hanson et al. 2001).
4.2.3 Western Province – Ok Tedi
This study region covers communities impacted by the Ok Tedi Mining Limited project that has been in operation for over 32 years. The three Ok Tedi case study communities of Bultem, Atemkit and Bige are part of the North Fly District in the Western Province (Figure 4.4). The district is located in the north of the Province and is one of the least developed districts in PNG. In the Upper North Fly region, where two of study communities are located, the township of Tabubil is 520 metres above sea level in the lower reaches of the Star Mountains (Hanson et al., 2001). The surrounding area is mountainous and is characterised by steep valleys and dense forest with a wet tropical climate. Tabubil receives between 8000–9000mm of rainfall annually, with around 85 percent humidity and an average of 2.4 hours of sunshine per day (Hanson et al., 2001; Bourke and Harwood, 2009; OTML, 2011).

4.2.3.1 Description of study region
Neither the topography nor climate in the Upper North Fly is suitable for agriculture. Traversing the rugged karst landforms over land is extremely difficult. Narrow river valleys cut through the mountains, from a peak altitude of around 1000 m in the north, down to the narrow floodplains below carrying the alluvial soils that support agriculture (OTFRDP 2010). In the south of the district where third study site is located, the steep valleys transform into the gently undulating topography of the Ok Tedi River floodplain, with well-developed clay soils on the hills and organic alluvial soils in the valleys. Average rainfall in the study region ranges from 4500 mm at Kiunga to 8000 mm in the upper Ok Tedi Valley. Altitude varies from 50 meters above sea level on the Fly floodplain to over 3000 metres on the Hindenburg Range (Jackson 1998; OTML 2006).
Figure 4.4: Location of case study region and communities in Western Province

Notes: Area corresponds to Inset 1 of Figure 4.1 showing the Wopkaimin and Awin linguistic groups.
Source: Base mapping supplied by Cartography, Australian National University, College of Asia Pacific Studies

4.2.3.2 Population and administration

The 2011 PNG National Census estimated an increase of about 72 percent in the district population, from 35,000 to 60,256, in the preceding decade. The number of households has also increased. The main factor influencing population growth is the Ok Tedi Mining development which has attracted inter-province and intra-district migration to the region (Hanson et al. 2001), as people search for a better lifestyle and employment opportunities. Apart from internal migration, there has been significant external migration due to recruitment by Ok Tedi Mining Limited (OTML) of professional and technical staff, many of whom are accompanied by their families in Tabubil and Kiunga.
4.2.3.3 Demography and language groups

The communities directly involved in this research were Bultem, Atemkit and Bige. Although located in the district of North Fly and impacted on by the Ok Tedi mine project, these communities are culturally and linguistically distinct in many ways. Figure 4.4 shows the three study communities representing the main linguistics groups found in the North Fly region. Understanding specific linguistics diversity from the outset is critical as it sets the foundation to describe other characteristics within the communities. The communities sampled in this study are from the Wopkaimin (Kaulmin) and Awin speaking groups as shown in Figure 4.4

Bultem

The Bultem community is situated about ten kilometers from Tabubil, which is the nearest administrative centre in the Star Mountain LLG area. It is part of the Wopkaimin (Min) ethno-linguistic populations of the North Fly region. Its social structure consists of patrilineal lineages. The community comprises three main indigenous clans namely, Kimka, Fikalin and Kinumsengayun, including a number of settlers, with a total population of 970 people. It is one of the six principal landowner villages impacted directly by the Ok Tedi Mining project. It is therefore one of the primary beneficiaries of the Ok Tedi Mine related benefits including the Community Mine Continuation Agreements (CMCA) benefits established in 2001.

Atemkit

Approximately 15 km west of Bultem is the main community of Atemkit. Due to limited road and logistical access to Tabubil, however, almost half of the village lives in Bultem. The main village is also located within the Star Mountain LLG area, and the community is also part of the Min ethno-linguistic population. Its social structures and systems are similar to those of Bultem community; the population is 288 inhabitants who are also descendants of the three main clans described in Bultem. This community are also recipients of the CMCA benefits.

Bige

Bige is approximately 100 km south of Tabubil and 45km north of Kiunga, the nearest administrative centre. It is situated in the Ningerum LLG area, and the community belongs to the Awin or Aekyom ethno-linguistic populations of the lower Ok Tedi region. Its social structures and systems exhibit similar patterns to those of Bultem and Atemkit. Ownership rights to land and properties are patrilineal. The community consists of six main clans: Meripen Bige, Hyma Poinannai, Hyma Hunai, Hore Bige, Amroe Bige and Amroe Rankya, with a total population of 159 people. It is one of the 19 villages in the Alice River (Lower Ok Tedi) CMCA Trust region that receive the benefits under CMCA arrangements.
4.2.3.4 Access to services and economy

The communities investigated in this study are accessible by road, air and water linking the two main administrative centres of Daru and Kiunga. There are also well maintained all-weather road systems built by OTML that link Tabubil to Ningerum and Kiunga. Well-maintained airport facilities, also built by OTML, are available in Kiunga and Tabubil. Outboard motor and canoe travel is commonly used along the lower part of Ok Tedi River (Hyndmam 1990; Hanson et al. 2001). People living inland from Tabubil require less than four hours travel to reach the nearest service centre, while those on the plains and hills around Ningerum, Kiunga, Debepeare and Iwara require up to eight hours. People in the Hindenburg Range and Wok Feneng, Palmer, Murray and Strickland valleys are very remote and require more than one day’s travel to reach Tabubil or Telefomin in the West Sepik Province (Hyndmam 1990; Hanson et al., 2001; OTFRDP, 2010). In light of some of the difficulties faced in the region, OTML has been assisting these communities with improved road and other physical infrastructure systems (OTFRDP 2010).

There are two hospitals within accessible range for communities in the study regions. The Tabubil hospital caters for the OTML employees and surrounding communities, including Bultem and Atemkit. Also established within the communities of Bultem and Atemkit is an Aid Post. In Tabubil area there is a well-established secondary high school and two primary schools that cater for the surrounding school population. The district hospital in Kiunga is a government public hospital, but presently there is no permanent local doctor. People living in outlying communities such as Bige, upper Ok Tedi and Nomad areas must travel four hours to reach Kiunga, others must travel for an entire day. There is also church run health center near Bige at Rumginae. The nearest high school is also located in Kiunga and furthest ones are in Ningerum and Tabubil for the people of Bige. The Miamrae Primary School is located within the Bige community.

Income

Annual provincial income per household per year is as low as between PGK21-50, based on rural villagers’ agricultural activities (Bourke and Harwood 2009). These estimates are consistent with those of Hanson et al. (2001) that incomes are low for people living on the hills and plains between Ningerum and Kiunga; principally derived from the sale of fresh food, betel nut, rubber and crocodile skins. All other people in the district earn very minimal incomes from seasonal sale of fresh food. However, for the communities subject to this study, the Ok Tedi mine provides various sources of income for people living in the west of the district as discussed in Chapter 5 (sections 5.2.3, 5.3.3 7 5.5.3). Those in the immediate Tabubil area, living in villages directly impacted by mine activity,
receive income from royalties, compensation and wage employment; many of the Ok speaking people, who live in the mountains north of Tabubil, receive remittances from relatives working at the mine. Subsequent to the 2001 the Community Mine Continuation Agreement (CMCA), the people along the Ok Tedi and Fly Rivers below the mine site have received compensation payments (Hanson et.al. 2001; Jackson 1998).

**Subsistence agriculture**

Sago is the most important food in the area between Ningerum and Kiunga and is supported by low intensity mixed staple cultivation. People in the Hindenburg Range cultivate low intensity taro gardens with sweet potato, Chinese taro and cassava, while those in the Upper Ok Tedi and Strickland valleys make low intensity mixed staple gardens. In the Iowara area, settlers cultivate moderate intensity mixed staple gardens (Hanson et al. 2001; Bourke and Harwood 2009).

### 4.3 Case study projects and their significance

As briefly introduced in previous Chapters, three natural resource-based development projects – one in each region – are at different stages of implementation in the case study regions. These projects are listed in Table 4.1, and comprise the proposed Nungwaia-Sengo Integrated Agroforestry Development Project (NSIADP), the Kairak Oil Palm Development Project (KOPDP) and the Ok Tedi Mining Limited (OTML) mine. These projects are inherently different, representing the forestry, agriculture and mining sectors, respectively, and at different scales; and given the diverse environmental and social circumstances in PNG, there are also likely to be differences between the three development projects in terms of their impacts on communities. This section describes the characteristics of each project and their contributions, or potential contributions, in the study regions.
Table 4.1: Main characteristics that identify case study site development projects.

<table>
<thead>
<tr>
<th>Region</th>
<th>East Sepik Province</th>
<th>East New Britain Province</th>
<th>Western Province</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource sector</td>
<td>Forestry</td>
<td>Agriculture</td>
<td>Mining</td>
</tr>
<tr>
<td>Time in operation (years)</td>
<td>Nil</td>
<td>Over 5</td>
<td>Over 30</td>
</tr>
<tr>
<td>Project impact</td>
<td>Potentially medium (provincial level)</td>
<td>Minor (provincial level)</td>
<td>Major (national level)</td>
</tr>
<tr>
<td>Development contribution</td>
<td>No revenue as yet</td>
<td>Revenue for ENBP</td>
<td>Major contributor to PNG and Western Province</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Bad roads, limited health, and education services, limited access to public services</td>
<td>Good roads, health and education services, access to public services</td>
<td>Well established roads, health and education services, access to public services</td>
</tr>
<tr>
<td>Institutional arrangements</td>
<td>One Land Owner Association</td>
<td>A few Land Owner Associations</td>
<td>Well established 'modern' systems, eg., CMCA, VPC, LOA, Women Assoc. and ILGs</td>
</tr>
<tr>
<td>Natural resource development institutions</td>
<td>2</td>
<td>5</td>
<td>20 +</td>
</tr>
<tr>
<td>Benefits</td>
<td>Nil</td>
<td>Very little benefits flow, e.g. royalties, to communities</td>
<td>Substantial benefit flows to communities, as royalties, compensation and related payments</td>
</tr>
<tr>
<td>Public interest</td>
<td>Nil</td>
<td>Little</td>
<td>Much attention from national and international communities</td>
</tr>
<tr>
<td>Social Conflicts</td>
<td>Nil as yet</td>
<td>Few</td>
<td>Many</td>
</tr>
<tr>
<td>Environmental issues</td>
<td>Nil as yet</td>
<td>Concern over deforestation</td>
<td>Severe damage to environment</td>
</tr>
</tbody>
</table>

Sources: OTDF 2010; PNG Government 2005; ENBPG 2010: ESPG 2009; Author’s Survey data 2012

One of the projects (NSIADP) has been mooted for many years but has yet to be initiated, for two reasons. First, the social mapping project to identify who the key land owners and beneficiaries are, is yet to be finalized and secondly, the Environmental Management Plan (EMP) is yet to be approved by the Department of Environment and Conservation. A second (KOPDP) is relatively new. Consequently, there is data on current household livelihoods and other community characteristics, but little data on the impacts of proposed or recent changes. In contrast, the OTML project has been one of the largest resource development projects in PNG for over 30 years, and has been a major contributor to the PNG economy, as well as to the socio-economic status of the people of Western Province. OTML has attracted much attention both nationally and internationally, largely because of
the downstream environmental and social impacts of its operations. Table 4.1 summarises the characteristics of the projects relevant to my study.

### 4.3.1 Nungwaia-Sengo Agroforestry Development Project

The Nungwaia-Sengo Integrated Agroforestry Development Project (NSIADP) has yet to commence operations. NSIADP is a project that proposes to develop four principle plantations crops on the gross land area of 54,384 hectares (Bakat 2009). These plantations crops comprise: 30,000 ha of teak; 7,000 ha of rubber; 2,000 ha of jathropa; and 2,000 ha of cocoa. These plantations would be established on areas that currently have extensive grassland cover (Bakat 2009). There are many benefits expected from this project. Some of these benefits are qualitative and cannot be measured or quantified in monetary values, while others can be quantified in monetary figures projected. Most of the benefits are categorised within the social services and economic benefits. Due to the long term nature of the project crops, major developments, social services and economic benefits are expected to be sustainable. According to the NSIADP project proposal document (2009), the intended benefits from this project include royalties and levies from the harvesting of timber within the project land. This will be paid under the PNG Forestry Act regulated rate as shown in Table 4.2

<table>
<thead>
<tr>
<th>Timber Species &amp; Descriptions</th>
<th>Price/PGK/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>For all Kwila (injia spp.) logs</td>
<td>35</td>
</tr>
<tr>
<td>For all export quality (Walnut and Pencil Cedar logs)</td>
<td>20</td>
</tr>
<tr>
<td>For all other export quality Group One Species</td>
<td>15</td>
</tr>
<tr>
<td>For all export and sawmill quality Group 2, 3 and 4 Species</td>
<td>10</td>
</tr>
<tr>
<td>For all undersized logs considered for wood chips and other uses</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: PNGFA 2009

Other benefits as specified in the proposal documents suggest that the landowners would receive 10% of the profits generated from the oil palm, rubber, jathropa and cocoa plantation estates, with an additional PGK4/ha/year as land rent for all land converted under planation (Bakat 2009). The proposal document also states that more local people will benefit from the project, without specifying details.

The aim of this project is to improve the economic situation of the people through participation in development opportunities, and to improve social services through the presence and benefits that flow from a resource development project.
To date the project has not started its operations, due to some technical and operational issues. For example, the Environment Management Plan (EMP) and social mapping to identify the legitimate landowners of, and beneficiaries from, this project is yet to be completed. At the time of this study, the above two activities were completed, and the reports were submitted to the Department of Environment and Conservation and PNG Forest Authority, respectively. However, the future of this project remains uncertain, as the government and bureaucratic approval processes in PNG take some time.

As there are no resource development benefits being distributed here, this case study illuminates the nature of leadership and institutional structures in traditional circumstances, prior to the development process. This case study was therefore able to assess community leaders’ behaviours in anticipation of the commencement of the project. One of important issues is how communities are responding in terms of formation of Incorporated Land Groups (ILGs) and other mechanisms designed to facilitate participation in the development processes. Details of these processes are provided in Chapters 5 and 6.

4.3.2 Kairak Oil Palm Development Project

The Kairak Oil Palm Development Project (KOPDP) is an agricultural cash crop development project established in 2008 in the Baining area of East New Britain Province. It involves developing plots of land for planting palm oil. The whole area was previously used widely for cocoa and coffee growing, but the cocoa plantations, which were the main source of income, were very severely impacted by the cocoa pod borer disease between 2004 and 2010. Palm oil was considered the best alternative export crop for the province. The project aims to generate economic opportunities for the people and the province. In this study, KOPDP is used to highlight the issues facing people in the beginning phases of a project. This project commenced operation in 2008, and so is yet to deliver any tangible benefits to the communities beyond some initial royalty payments to the Liaga community.

4.3.2.1 Kairak Oil Palm Development Project

Currently, the only formal structure to coordinate and channel royalties to the communities is the Kairak Land Owner Association (KLOA). Under the current informal system, royalties are initially paid through the KLOA, the executive members of which are mostly clan leaders. The KLOA then distributes these monies to various ILGs through their respective clan leaders; clan heads then distribute payments to the household heads (Figure 4.5). Whilst the process sounds feasible in theory, in practice this process has been a contentious issue in these communities.
4.3.3 Ok Tedi Mining project

Ok Tedi is a world-scale gold and copper mine located in the Star Mountains area of Western Province, PNG. The project was the country's first major post-independence mining operation, developed as part of a national strategy to generate revenue for the state and create employment opportunities for its people (Kepore and Imbun 2010). As anticipated, its contribution to PNG is profound, with 25% of export earnings, 15% of GDP and 20% of tax receipts in 2005 (Faulkner, 2005; Ok Tedi 2006). The mine is managed and operated by Ok Tedi Mining Limited (OTML), with headquarters located in the township of Tabubil. The mine site is located on Mount Fubilan, 18 km from the PNG/Indonesian border (Beno and Kawi 2006). The company’s shareholders are PNG Sustainable Development Program Limited (PNGSDPL) (52%), Inmet Mining Ltd (18%), and the PNG Government (30%). The PNG Government’s 30% shareholding comprises: 15% direct equity; 10% on behalf of the people of Western Province; 2.5% on behalf of the Fly River Provincial Government; and 2.5% on behalf of landowners from the mine area. The PNGSDPL shares were owned by BHP Billiton Ltd until January 2002. The PNGSDP’s dividends from OTML are intended for the benefit of the people of Western Province and Papua New Guinea generally, in the form of sustainable development projects ((Beno and Kawi 2006; Kepore and Imbun 2010).
4.3.3.1 Community Mine Continuation Agreement

Prior to the exit of BHP Billiton Ltd, in December 2001, Ok Tedi Mining Limited (OTML) entered into compensation agreements known as Community Mine Continuation Agreement (CMCA) with 14 communities whose environments were adversely impacted by the mining operations (Beno and Kawi 2006). The CMCA comprise deeds of various agreements, policy guidelines and legal frameworks relating to distributions of benefits (in terms of cash, kind and community projects) to communities and stakeholders such as provincial and local level governments. Under the CMCA, the communities consented to the continuation of the mine based upon the then predicted environmental impacts in exchange for compensation; and agreed not to pursue any legal action or claims against OTML, or its previous shareholders, and to allow the mine to continue its operations until end of mine life, which was at that time indicated to be around the year 2013. Following the execution of the CMCA, the National Parliament passed and ratified the *Ninth Supplemental Agreement Act 2001*, to provide the legal basis to the Agreements. The CMCA cover 9 regions comprising 156 villages and an estimated 100,000 people; these extend from the mine area, North Ok Tedi, Lower Ok Tedi, and the Highway Region from Tabubil to Kiunga, to the Middle and South Fly areas. The CMCAAs established Trusts for each region, through which compensation payments are still being made. The Trusts administer these funds on behalf of the affected regions.

4.3.3.2 Ok Tedi Development Foundation

The enactment of the *Ninth Supplemental Agreement Act 2001*, commonly referred to the Community Mine Continuation Agreement (CMCA), meant a new body was to be established to deliver community development projects in the CMCA regions and communities. This was the Ok Tedi Development Foundation (OTDF), which was established under Clause 6 (Section 11) of the *Ninth Supplemental Agreement Act 2001*. In April 2002, OTML registered OTDF as a not-for-profit company, responsible for managing community development funds from Ok Tedi mining company, on behalf of the 100,000 river residents living in 156 villages throughout Western Province. Renamed the Ok Tedi Fly River Development Program since 2010, it delivers projects and programs to communities through a partnership between mine operator, communities and the government.
4.3.3.3 CMCA management and systems for sharing resources

This section describes how the CMCA benefits are delivered to the mine-affected communities. The OTML compensation is delivered in two components to the CMCA beneficiaries, first, in the form of direct cash payments and, second, through development projects and programs. The first component which is the direct cash payments is managed by OTML’s Community Relations (CR) department (see Figure 4.6), and the second component (the development projects and programs) is administered by the OTDF.

The CR team’s main role is to address grievances and manage conflicts. One of the key tasks is to pay royalties and compensation payments to impacted CMCA communities. By doing this, CR sets the foundations that allow OTDF to implement the sustainable community development projects such as health, education, infrastructure, businesses and other related opportunities that the communities are able to take on. Simply, the short term community benefits are addressed by the CR team, while OTML focuses on the long-term benefits of the CMCA communities.

The implementation of projects by OTDF through its specialized staff members serves a number of purposes, including addressing community members’ perceptions of the process being biased or unfair if it was to be implemented by the community members themselves (Beno and Kawi 2004; OTML 2012). As shown in Figure 4.6, the CMCA process is a structured and coordinated management system. The actual process involved in implementing a project (such as portable timber milling project or water supply) follows a project implementation circle that begins with village project nomination, planning, appraisal, trust approval, implementation, monitoring and completion. The major stakeholders and their roles involved in the CMCA processes are: OTDF (now OTFRDP) as managers of the process; Village Planning Committees (VPCs), the body that screens and selects village projects and individual groups or communities that nominate projects; and The Local Trust Foundations (LTFs), which manages the community funds. Both the VPCs and the LTFs are community-level structures established under CMCA arrangements, as explained below.
Figure 4.6: Community Mine Continuation Agreement project implementation decision making process.

Source: Adapted from OTFRDP (2010).

Prior to the CMCA in 2001, cash benefits - particularly royalties and compensation - were paid through clan groups, usually headed by clan leaders. Clan leaders were responsible for distributing the cash to their members. Between 2001 and 2009, the royalty and compensation monies were often unwisely used or mismanaged by the clan leaders (Siop 2008; Kalinoe 2010; Mulung 2012; OTML 2013).

According to OTML sources and my own experience working with the CMCA communities, benefits in three WP communities studied are distributed according to the CMCA process. In 2009/2010, a new system, called the ‘family account payment’, was instituted; it allows OTML/OTDF to pay royalties and compensation monies directly into family bank accounts. This bypasses the previous arrangement through the clan, which had caused a significant increases in disputes among community members. The family account payment system is used in the three case study communities (OTML 2009).
4.3.3.4 Community Mine Continuation Agreement institutions

In the PNG context, large-scale natural resource developments inevitably establish institutions and organisations, which serve the interest of communities in which they are mandated to operate (Liu 2010). A study by Bainton (2008) noted that communities around the Lihir Gold mine in New Ireland Province are represented through a number of institutions aimed at providing overall direction on community life. This is to ensure that the social, economic, natural and physical transformation in the context of the gold mine operation is dealt with appropriately. In the case of OTML, CMCA communities of Western Province are represented in formally-established institutions and organisations intended to facilitate their participation in the development process (Wissink 2007; Siop 2008; OTML 2010). Both regional and village-based institutions have been established under the OTDF/OTML CMCA benefits distribution systems. Five main institutions/organisations have been established: the Village Planning Committees (VPCs), Local Trust Foundations (LTF), Ok Tedi Mine Impact Area Association (OTMIAA), Women’s Associations (WA), and Landowner Companies (LOC).

Village Planning Committees (VPCs) are the bodies, elected by the people associated with CMCA villages, to oversee the management and implementation of approved projects in the 156 CMCA villages. Local Trust Foundation (LTF) is a regional body that manages the community CMCA funds in association with OTDF, which operates as the fund manager. Both VPCs and the LTF play key roles in decision making around the use of royalty and compensation monies to deliver community projects.

Ok Tedi Mine Impact Area Association (OTMIAA) is a body that was established to ensure that CMCA funds and other benefits are used effectively, transparently with real benefits received by all for the CMCA communities (OTFRDP 2010). The Women’s Association (WA) is a body that governs the use of the 10% of CMCA funds earmarked for women’s and children’s – oriented activities. Land Owner Companies (LOC) are entities established within the CMCA that are engaged in business activities. LOC are comprise of the various clan groups representing the impacted communities through their clan leaders. There are about 24 LOC within the region, providing a range of goods and services to the mine-affected communities, including labour supply, security services, constitutions and small-scale business activities such as supply of vegetables to OTML. Examples of LOC are the Star Mountain Holdings and the Lower Ok Tedi Investment Company (LOTIC). These are umbrella companies of which the three studied communities, Bultem, Atemkit and Bige, are a part.

Generally, the composition of the LOA and related organisation’s executives comprise of the clan leaders of major clans who are directly impacted by the projects. Other leaders of the sub-clan within
the community are also part of LOA and related associations. The composition of both major and sub-clans leaders in these organisations, there is a general perception that communities’ (inclusive of major and minor clans) concerns will be fairly accommodated by these leaders. However, in practice sense other community members believe they are being unfairly treated as their desired outcomes are not being attended to. These are views usually expressed by the sub-clan members. They believe that, the clan leaders of the major clans influence most of the decisions to benefit themselves and their relatives. This creates disparities and disunities amongst the whole community which usually leaders to conflicts.

4.3.3.5 CMCA contribution to PNG and WP communities

OTML has, over the last 30 years, been a major revenue source for PNG, Western Province and the study communities (PNGSPDL, 2010: 2011). Since its operations began in 1984, it has also significantly contributed to major social infrastructure development throughout PNG. For example, in 2005, OTML’s export sales were PNG K3.3 billion, the largest in its 25-year history. In 2004, the company’s exports represented approximately one quarter of PNG’s total exports. In 2012, about PGK29.8M was contributed to OTDF for the CMCA community development programmes (OTML, 2012) and in 2014 further PGK 11.3M and PGK59.3M for Western province infrastructure projects (OTML 2014). To date OTML has contributed PGK 934.4M as net royalties paid since1982 and a total of PGK1,433.6M to the local and PNG economies. Typically in the last decade, OTML contributed 5.5% of the PNG GDP.

Besides ongoing contributions to the PNG economy, OTML directly employs about 2,000 people. More than 1900 (95%) are PNG nationals and 37% are from Western Province. In addition, businesses that work under contract to OTML employ more than 1,200 people, of whom 95% are PNG nationals. These businesses and their employees play a significant role in supplying goods and services to the mine (OTML, 2012; 2014).

Apart from economic and employment contributions, OTML also impacts on the lives of many people within Ok Tedi area, through CMCA programs and the economic opportunities that they create. For example, between 2001 and 2007, about 70 local businesses were established that provided employment for over 2,000 local people (ADB 2008; Siop 2008; OTML 2014).

A major trade-off for these benefits has been the wide ranging environmental impact of the mine. On average, 80 million tons of tailings and overburden are discharged into the Ok Tedi River annually. Sediment build-up downstream (including the Bige area) has displaced the river ecosystems with subsequent and significant impact on many people and their environment. Recent problems include
forest dieback and acid rock drainage resulting in large areas being left devoid of any vegetation. Despite these problems, OTML has continued for many years as a compromise between the environmental consequences and economic priorities of different stakeholders. Nevertheless, the OTML Board in 2001 decided to close the mine in 2013 (ADB 2008; Siop 2008).

Despite the closure announcement (which was not considered the best option for the main stakeholders), OTML has begun higher-level mitigation against environmental impacts along the Ok Tedi River systems. While mitigation efforts were underway previously, CMCA reviews co-sponsored by OTML and GoPNG were carried out, to gauge communities’ views. Based on the CMCA review in 2007, communities agreed for OTML to continue its mining operation in return for a better benefits package, equivalent to the cost of damages incurred to the environment. On this understanding, an agreement with a value of PGK2.1 billion was made between the communities, OTML and GoPNG. The deal included benefits in terms of direct cash payments and indirect payments through development projects and programs. This was more substantial than the previous packages, which were mainly focused on the monetary component of compensation payment (OTML 2007). While such benefits are payable to the communities, OTML has also constructed two waste (pyrite) storage dams at Bige, which were completed in 2010. Although it is impossible to stop overflow of the chemicals into the river system with the high rainfall, the aim was to minimize risks of discharging large quantity of chemicals into the river systems (OTML 2011).

4.4 Conflicts in resource development communities

In this section, I discuss some of the pressing issues that exist within the resource development project areas. A key issue to note is the conflicts that arise within and between communities and resource developers. As described in Chapters 2 and 3, conflicts are inevitable in resource impact regions in PNG. These conflicts occur for several reasons, particularly related to perceptions of unfair distributions of benefits and services in the communities (Haley and May 2007; Gilberthorpe and Banks 2011; Colvin et al 2015). Kepore and Imbun (2006)’s analysis of the Lower Ok Tedi communities, reporting that most people are adversely affected in terms of pollutions and degradation of their environment, displacement of villages and lose of customs and traditions and are not fairly compensated, is indicative. In the following section, I review conflicts in each of the case study regions.
4.4.1 East Sepik Province

As mentioned previously, this region has yet to see the proposed development and its impacts, which means conflicts related to resource development are not discussed here. However, I shall look at some of predevelopment conflicts in the region, which occur as they do in any other region of the country. Conflicts related to land rights and ownership are ubiquitous in PNG (Colvin et al 2011; Gilberthorpe and Banks 2015).

The people of East Sepik study region, as elsewhere in PNG, view land as their source of life and wealth, of income, status and prestige, and of security and identity (Kwa 1994; Filer 2007). This implies that, with or without development, conflicts over land are common, particularly over the use and access of land for materials for house construction, gardening, and hunting and related purposes (Power 2004). These land ownership disputes are widespread and are of the most sensitive in PNG communities. (Haley and May 2007; Allen and Monson 2015). Land disputes have been a major, though not exclusive, cause of inter-group violence in the Highlands (Filer 2007; Haley and May 2007; Allen and Monson, 2013). Other scholars such as Koczberski and Curry 2004) argue that land has been at the centre of social and ethnic tensions in places where there are large number of migrant settlers occupying customary land, such as in the oil palm growing regions of West New Britain Province.

In resource development context, one of the key issues why a project has not started or has failed is due to lack of agreement over land boundaries, where their demarcation and related genealogical data is not been done well. There are many examples of such issues. An obvious case is the civil conflict in Bougainville that started with communities’ land rights, social identity, and compensation payments from the Panguna copper mine project (Gilberthorpe and Banks 2015). Other similar projects such as Porgera, Lihir and Hidden Valley gold mines, and the current Liquefied Natural Gas (LNG) project, are also confronted with similar conflicts (Haley and May 2007; Banks 2008; Gilberthorpe and Banks 2015). Thus, similar conflicts can be expected in the proposed forestry project in East Sepik Province.

4.4.2 East New Britain Province

Conflicts over land disputes are well known in ENBP (Reilly 2008; Martin 2013). As the population increases with development and migration into ENBP, there have been shortages of land; this results in conflicts between families, clans and tribes at the local levels. However, there have been also cases of conflicts at provincial and national levels, mostly related to use and development of land in ENBP.
In the past two decades, these conflicts have been associated with ‘land grabs’ by logging companies and industrial oil palm estate companies (Filer 2011; PNG CELCO PNG 2015).

For example, there are conflicts amongst the communities such those observed in Matupit and Sikut communities after the 1994 volcanic eruption, during resettlements and reclaiming of lands and properties (Martin 2013). In Liaga, where the case study project is located, disputes between the three rival clans are imminent because of disputes over unequal distribution of royalties and compensation payments by community leaders from KOPDP. I learned during the study that there have been physical confrontations between the two major clans, Sukparmatka and Avir. Martin (2013) maintains that inter-generational tensions, conflicts and changing outlooks loom large in this modern economy and society. For example, the Tolai, like many people in PNG, often remark and reflect on the changes that they have observed in their lifetime. Elders usually insist (like elders elsewhere in the world) that the younger generations have lost respect for them, have no knowledge of the ways that traditions should be maintained and have become individualistic and selfish. Martin (ibid) notes these generational differences generate mixed emotional responses: regrets and censure, impatience and dismissal, sorrow and anger. These observations describe well the situation in contemporary societies in PNG in which conflicts are imminent.

4.4.3 Western Province

Whilst the inherent conflicts over land in WP are similar to these elsewhere in PNG, conflicts in this region are far more than just land conflicts. The presence of Ok Tedi Mining Limited (OTML) and its impacts has increased the levels of conflicts within families and clans to large-scale conflicts over royalty moneys distributions, compensation payments and other development project benefits. As described in Section 4.3.3, despite the significance of contributions by OTML to impacted communities, it still faces challenges amongst the communities. For example, in the 1990s, OTML was confronted with the lawsuit against its operation by the Lower Ok Tedi communities, because of continuous damages caused to their environment and livelihoods (Kepore and Imbun 2011). Kepore and Imbun (2011) argue that, despite its positive economic contributions, the mine's presence also created economic inequalities amongst different groups of indigenous communities. For example, the Wopkamin (in this study, Bultem and Atemkit as traditional landowners) having benefited directly from mining royalties, business spin-offs, and housing relocation projects, and appear to enjoy a higher standard of living than other communities. On the other hand, the Awin (Bige- the third study site), whose main source of livelihood is the Ok Tedi River, appear to have been marginalized and deprived of economic benefits (Kirsch 1992; Mulung 2012; Imbun and Kepore 2011). This obvious disparity had catalysd the filing of a lawsuit against BHP by landowners from the Ok Tedi and Fly Rivers, for alleged environmental pollution and loss of economic livelihood.
Generally, conflicts in PNG, whether ethnic or resource development–related, remain predominantly a local-level phenomenon. At the national level, as Reilly (2008) puts it, the country’s multiplicity of ethno-linguistics groups means that some degree of inter-ethnic cooperation and accommodations is usually unavoidable. Thus, one reason that PNG has been able to maintain a system of continuous democracy despite a precipitous decline in state capacity is the reality that no group has the potential to overthrow the incumbent regime (Reilly 2008).

Most conflict in PNG takes place at the local level. While this does not make such conflicts inherently less important, it does limit their impact on national issues. Of course, local conflicts can, if left unchecked, eventually rise to challenge the state itself – as occurred in PNG’s in Bougainville (Allen and Monson 2015) and the neighboring Solomon Islands, in 2001–2003 where tensions between populations of the two of the main island groups resulted in the capture and overthrow of the elected government (Reilly 2008). However, many studies (e.g., Haley and May 2007; Banks 2008; Reilly 2008; Gilberthorpe and Banks 2015) suggest that because of the unique nature of its ethno-linguistic structure, conflicts for control over resources and the state itself has never been a serious threat to the state in PNG.

4.5 Conclusions drawn on case study characteristics

The three case study regions presented diverse environments contexts for research. In all cases, however, subsistence agriculture is the dominant form of livelihood activity. At the same time, the three regions have varying degree of impacts from different form of resource projects. The purposeful sampling strategy meant relatively similar sized population was sampled in each case community. The results of my research in each case study region are presented in the following two Chapters.
Chapter 5: Survey population characteristics, livelihoods and vulnerabilities in case study communities

5.1 Introduction

This chapter presents a summary of the characteristics of my survey population, and the results of my investigation of livelihoods and vulnerabilities, in each of three communities in each of the three case study regions. The first part of the chapter, which describes the key characteristics of my survey population, provides essential context for interpretation and discussion in subsequent chapters. The second part of the chapter responds to my first part of the subsidiary research questions stated in Chapter 1.4.2, and restated here:

What are the livelihood assets, consumption and spending behaviours, vulnerabilities and livelihoods strategies evident in the communities in the three case studies?

The second part of the first subsidiary research question is addressed in Chapter 6.

These results reported here are primarily responses obtained from household surveys, supported by those from group meetings, and from participant observations. Following the key elements of the Sustainable Livelihoods Framework component of my integrated conceptual framework (Figure 3.2), the chapter describes communities’ livelihoods assets, their consumption and spending behaviours, the associated livelihood outcomes, and their vulnerabilities. The order of presentation is that followed in Chapter 4, from least to greatest project development impact, viz. East Sepik, East New Britain and Western Provinces, respectively.

5.2 Survey population characteristics

I collected a wide range of field data from social surveys, field observations, interviews, and secondary data sources including literature surveys and field reports. Tables 5.1 and 5.2 provide summary of population sampled, and their age and educational qualifications. The sample design for this study drew on purposeful sampling strategy by Patton (2002) as the basis for identifying, selecting and gathering data for this study analysis. The actual methodological procedure used by this study is described and presented in Chapter 3.4 and Appendix No. 5. The primary participants in the study comprised 132 households and 282 members from group meetings, totalling 414 participants (see Table 5.1).
Table 5.1: Population sampled in this study.

<table>
<thead>
<tr>
<th>Community</th>
<th>Community meetings</th>
<th>Household interviews</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Youth</td>
</tr>
<tr>
<td>East Sepik Province</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ugutagua</td>
<td>1</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Jipakim</td>
<td>1</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Numamaka</td>
<td>1</td>
<td>41</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>79</td>
<td>27</td>
</tr>
<tr>
<td>East New Britain Province</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liaga</td>
<td>1</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Manapki</td>
<td>1</td>
<td>25</td>
<td>2</td>
</tr>
<tr>
<td>Nabata</td>
<td>1</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>48</td>
<td>27</td>
</tr>
<tr>
<td>Western Province</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bultem</td>
<td>1</td>
<td>31</td>
<td>7</td>
</tr>
<tr>
<td>Atemkit</td>
<td>1</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Bige</td>
<td>1</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>48</td>
<td>14</td>
</tr>
<tr>
<td>Subtotal</td>
<td>9</td>
<td>175</td>
<td>68</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, Jun - Oct 2012

The age and educational qualifications of each of the participants were also recorded (Table 5.2). This was considered relevant in this study as it may have implications for responses provided by the participants.
Table 5.2: Age and educational qualifications of the sampled population

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>East Sepik Province</th>
<th>East New Britain Province</th>
<th>Western Province</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ugutakua</td>
<td>Jipakim</td>
<td>Numamaka</td>
</tr>
<tr>
<td>20-30</td>
<td>12</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>31-40</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Over 40</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>11</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highest education qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1-6</td>
</tr>
<tr>
<td>Grade 7-12</td>
</tr>
<tr>
<td>Trade/College</td>
</tr>
<tr>
<td>University</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Author's Survey data, Jun - Oct 2012

The majority of those sampled in each community and region, typically c. 75%, were between 20 – 30 years of age, with approximately equal proportions between 31 – 40 years and over 40 years. The proportion who had completed only primary school ranged from c. 33 - 67%, and who had completed high school from 20 – 50%. Only small numbers had progressed to tertiary education.

As can be seen from Table 5.1 that, the sample of respondents in the household survey component of this study was heavily biased in all but one case towards men. The exception was in Nabata, a community in a matriarchal society. In Nabata, women dominated the survey as they are the traditional owners of land and resources, and the decisions makers. The rest of the study sites were patriarchal communities where men (particularly husbands in this study) dominated the discussions and made decisions. While it is understood in PNG communities that a husband speaking on behalf of a household will have consulted with his wife, cultural mores generally preclude male researchers from private interviews with female respondents. For this reason, I was not able to interview more women participant to solicit the views of women in most case study communities. Subsequent research which better includes the participation of women would be desirable.
5.3 Livelihood assets of the case study communities

This section reports the livelihood assets of the case study communities in the three case study regions of East Sepik Province (ESP), East New Britain Province (ENBP) and Western Province (WP). The assets assessed comprised five components (social, human, physical, financial and natural resources) of the Sustainable Livelihood Framework (SLF), presented in Chapter 2.10.2 and Figure 2.2, and represented in the conceptual framework for the study presented in Figure 3.2.

5.3.1 East Sepik Province

This section discusses the assets base found in ESP region, particularly in the three case study communities. Tables 5.1 provides an overview of the current livelihood assets-base of each of three communities. The assessment was based on the Likert Scale analysis method suggested by Uebersax (2006). The total number of households participating in ESP was 42; the sampled villages are given codes (V1, V2 & V3), and responses are summarised in Table 5.3. Participants were asked to assess strength and weaknesses of each of these assets by allocating an approximate score ranging from 1-5 (1 being the weakest and 5 being the strongest).
Table 5.3: Proportion and number (bracketed) of participants in ESP study communities providing each response about their current assets base

<table>
<thead>
<tr>
<th>Village 1 (n=17)</th>
<th>Strongest</th>
<th>Strong</th>
<th>Neither</th>
<th>Weak</th>
<th>Weakest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social -% (#)</td>
<td>53 (9)</td>
<td>24 (4)</td>
<td>18 (3)</td>
<td>6 (1)</td>
<td>0</td>
</tr>
<tr>
<td>Natural -% (#)</td>
<td>59 (10)</td>
<td>18 (3)</td>
<td>12 (2)</td>
<td>6 (1)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Financial -% (#)</td>
<td>0 (0)</td>
<td>6 (1)</td>
<td>24 (4)</td>
<td>65 (11)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Human -% (#)</td>
<td>6 (1)</td>
<td>12 (2)</td>
<td>24 (4)</td>
<td>53 (9)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Physical -% (#)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>12 (2)</td>
<td>76 (13)</td>
<td>12 (2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=12)</th>
<th>Social -% (#)</th>
<th>58 (7)</th>
<th>25 (3)</th>
<th>17 (2)</th>
<th>0 (0)</th>
<th>0 (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural -% (#)</td>
<td>67 (8)</td>
<td>17 (2)</td>
<td>17 (2)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Financial -% (#)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>17 (2)</td>
<td>58 (7)</td>
<td>25 (3)</td>
<td></td>
</tr>
<tr>
<td>Human -% (#)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>33 (4)</td>
<td>50 (6)</td>
<td>17 (2)</td>
<td></td>
</tr>
<tr>
<td>Physical -% (#)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>75 (9)</td>
<td>25 (3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=13)</th>
<th>Social -% (#)</th>
<th>69 (9)</th>
<th>15 (2)</th>
<th>0 (0)</th>
<th>8 (1)</th>
<th>8 (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural -% (#)</td>
<td>23 (3)</td>
<td>23 (3)</td>
<td>46 (6)</td>
<td>8 (1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Financial -% (#)</td>
<td>0 (0)</td>
<td>15 (2)</td>
<td>23 (3)</td>
<td>62 (8)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Human -% (#)</td>
<td>8 (1)</td>
<td>15 (2)</td>
<td>23 (3)</td>
<td>54 (7)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Physical -% (#)</td>
<td>0 (0)</td>
<td>15 (2)</td>
<td>23 (3)</td>
<td>62 (8)</td>
<td>0 (0)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Total number of respondents: 42

Source: Author's Survey data, Jun 2012

5.3.2 East New Britain Province

As with ESP analysis, the analysis of ENBP livelihood assets focused on communities’ current capital assets-base. The five components of social, human, physical, financial and natural assets of the SLF were assessed using a Likert Scale, as described above. There were 47 respondents across the three case study communities. Table 5.4 provides a synopsis of these results.
Table 5.4: Proportion and number (bracketed) of participants in ENBP study communities providing each response about their current assets base

<table>
<thead>
<tr>
<th>Village 1 (n=16)</th>
<th>Strongest</th>
<th>Strong</th>
<th>Neither</th>
<th>Weak</th>
<th>Weakest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social % (#)</td>
<td>6 (1)</td>
<td>13 (2)</td>
<td>25 (4)</td>
<td>56 (9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Natural % (#)</td>
<td>0 (0)</td>
<td>31 (5)</td>
<td>19 (3)</td>
<td>50 (8)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Financial % (#)</td>
<td>6 (1)</td>
<td>31 (5)</td>
<td>50 (8)</td>
<td>13 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Human % (#)</td>
<td>0 (0)</td>
<td>13 (2)</td>
<td>19 (3)</td>
<td>50 (8)</td>
<td>19 (3)</td>
</tr>
<tr>
<td>Physical % (#)</td>
<td>0 (0)</td>
<td>25 (4)</td>
<td>13 (2)</td>
<td>38 (6)</td>
<td>25 (4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social % (#)</td>
</tr>
<tr>
<td>Natural % (#)</td>
</tr>
<tr>
<td>Financial % (#)</td>
</tr>
<tr>
<td>Human % (#)</td>
</tr>
<tr>
<td>Physical % (#)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social % (#)</td>
</tr>
<tr>
<td>Natural % (#)</td>
</tr>
<tr>
<td>Financial % (#)</td>
</tr>
<tr>
<td>Human % (#)</td>
</tr>
<tr>
<td>Physical % (#)</td>
</tr>
</tbody>
</table>

Note: Total number of respondents: 47

Source: Author’s Survey data, Liaga, Manapki and Nabata communities, Apr 2012

Results from Table 5.4 indicate that, of the 47 respondents assessed, on average, 62% (range 19-88%) stated that social assets were the strongest. Natural assets were the next highest rated, with an average of 43% (range: 31-67%), followed by physical assets (40%; range 25-63%), human assets (28%; range 13-44%) and financial assets (23%, 13-38%).

The results also show variations between the three communities studied. For example, V1 has lowest social asset-base (19%) compared to V2 and V3 with 80% and 88% respectively. This is because V1 is directly impacted by the development project studied (KOPDP), and social problems relating to distributions of benefits are anticipated there, as in other project impacted regions in PNG (Kepore and Imbun 2006). In terms of natural resources, a stronger asset base was reported in V2 than the other villages. This may be because there is abundance of natural forests and other land resources in the area of this village, and most of these resources are intact because the villagers are settlers from
other parts of the country. This means they have not legitimate rights over the use of these natural resources, unless they are permitted by the landowners. In contrast, V1 and V3 have experienced some form of development in terms of logging and agricultural estates over the last 3 - 4 decades. This means that these villages may have lost most of their natural resource assets. In regard to finance, it appears that V1 has a stronger assets base than V2 and V3. This is due to the fact they receive royalties from the project, in addition to their normal sources from garden and cash crops; the other two villages depend entirely on their usual cash crops and garden produce.

Respondents for V3 assessed their human and physical assets as greater did those from the other villages. V3 is a semi-urban village situated at the proximity of Rabaul Town, while V2 and V1 are rural villages in the Inland Baining LLG area. V3 has well-maintained road systems and has good access to most public services including health, education and markets.

This reflects the long history of agriculturally-based development in the region, including considerable development over the last three decades (Hanson, et, al. 2001; Bourke and Harwood 2009; ENBP 2012). My observations throughout these study communities suggest that communities are connected with access roads, schools, health services, markets, and town centres. Similar observations were also made by Hanson et, al. (2001) and Martin (2013).

5.3.3 Western Province
The assessment for WP region is based on responses from 43 households. As with ESP and ENBP cases, the participants themselves assessed the strength and weaknesses of each of the livelihood assets by assigning an approximate score ranging from 1– 5. The results are summarised in Table 5.5.
Table 5.5: Proportion and number (bracketed) of participants in WP study communities providing each response about their current assets base

<table>
<thead>
<tr>
<th>Village 1 (n=16)</th>
<th>Strongest</th>
<th>Strong</th>
<th>Neither</th>
<th>Weak</th>
<th>Weakest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social -% (#)</td>
<td>6 (1)</td>
<td>13 (2)</td>
<td>25 (4)</td>
<td>56 (9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Natural -% (#)</td>
<td>13 (2)</td>
<td>25 (4)</td>
<td>44 (7)</td>
<td>19 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Financial -% (#)</td>
<td>50 (8)</td>
<td>31 (5)</td>
<td>13 (2)</td>
<td>6 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Human -% (#)</td>
<td>44 (7)</td>
<td>25 (4)</td>
<td>19 (3)</td>
<td>13 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Physical -% (#)</td>
<td>69 (11)</td>
<td>25 (4)</td>
<td>6 (1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=13)</th>
<th>Strongest</th>
<th>Strong</th>
<th>Neither</th>
<th>Weak</th>
<th>Weakest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social -% (#)</td>
<td>15 (2)</td>
<td>23 (3)</td>
<td>8 (1)</td>
<td>54 (7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Natural -% (#)</td>
<td>54 (7)</td>
<td>15 (2)</td>
<td>0 (0)</td>
<td>31 (4)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Financial -% (#)</td>
<td>54 (7)</td>
<td>15 (2)</td>
<td>8 (1)</td>
<td>23 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Human -% (#)</td>
<td>46 (6)</td>
<td>15 (2)</td>
<td>15 (2)</td>
<td>23 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Physical -% (#)</td>
<td>77 (10)</td>
<td>15 (2)</td>
<td>0 (0)</td>
<td>8 (1)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=14)</th>
<th>Strongest</th>
<th>Strong</th>
<th>Neither</th>
<th>Weak</th>
<th>Weakest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social -% (#)</td>
<td>14 (2)</td>
<td>14 (2)</td>
<td>14 (2)</td>
<td>57 (8)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Natural -% (#)</td>
<td>7 (1)</td>
<td>14 (2)</td>
<td>36 (5)</td>
<td>43 (6)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Financial -% (#)</td>
<td>14 (2)</td>
<td>57 (8)</td>
<td>14 (2)</td>
<td>14 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Human -% (#)</td>
<td>7 (1)</td>
<td>29 (4)</td>
<td>21 (3)</td>
<td>43 (6)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Physical -% (#)</td>
<td>57 (8)</td>
<td>14 (2)</td>
<td>7 (1)</td>
<td>21 (3)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Note: Total number of respondents: 43

Source: Author’s Survey data, Bultem, Atemkit and Bige communities, Jun 2012

As can be seen from Table 5.5, of the 43 respondents surveyed, on average 86% (range: 71- 94%) indicated that physical assets were their strongest. Their next strongest assets-base was financial (74%; range 69-81%) percent, followed by human (56%; 36- 69%) and natural (43%; 21-69%) assets; social assets (29%; 19-38) were seen as the weakest assets.

These results are largely consistent across the WP case study communities, who saw physical and financial assets as their strongest assets, with human and natural assets assessed at intermediate levels. Social assets were seen as weakest. The variations between communities will be discussed in Chapter 7.

5.3.4 Summary analyses of livelihood assets

In section, I provide a summary of the findings about the livelihoods assets above across the three case study regions. I do this by aggregating the proportions of responses in Likert Scale categories 1
and 2 (Strongest or Strong), in Figure 5.1, and – conversely – responses in categories 4 and 5 (Weak or Weakest) in Figure 5.2.

Figure 5.1: Average proportion of respondents in each of the case study regions who scored each asset as strong or strongest.

As can be seen from Figure 5.1, social and natural assets are strongest for ESP study communities (81 and 68% respectively) compared to ENBP (62 and 43% respectively) and WP (29 and 43% respectively). In contrast, financial, human and physical assets are rated as much stronger (74, 56 and 86% respectively) in WP than in ESP or ENBP. ESP and ENBP have a more similar pattern of asset distribution than does WP. However, ENBP has a more balanced distribution of assets across the different classes.

Figure 5.2 presents the average proportion of respondents who assessed each asset base as ‘weak’ or ‘weakest’.
These results are largely the converse of those discussed above. ESP respondents believed that the three asset classes of physical (76%), financial (72%) and human (60%) to be weakest; these were much higher proportions than the other regions. In contrast, some 60% of WP respondents assessed their social assets to be weakest. ENBP responses were generally intermediate between those of the other provinces.

5.4 Livelihood strategies

This section discusses livelihood strategies pursued by the communities in these study regions. The discussions is based on data collected from 132 households and further supported by community groups’ responses and personal observations. There are two main livelihood strategies pursued by these study communities. There are the food production system and cash income earning strategies. The food production refers to the people’s subsistence food gardening system, where and how foods are sourced and consumed. Cash earning strategies are the various sources available that people pursue to earn income including royalties and compensation payments from development, cash cropping activities and the merging informal market sector. An informal market refers to earning income from sale of goods and services at the household level. It does not require a formal trading license to conduct business through informal and means. In PNG, informal markets operate on a 24 hours basis, which they provide a great deal of flexibility in terms of business hours.
5.4.1 Livelihood strategies in East Sepik Province

Findings from this study suggest that the people from Ugutakua, Jipakim and Numamaka pursued similar livelihood strategies. These two main livelihood strategies are food production systems and cash income earning opportunities. Each of these strategies are discussed in the following sections.

5.1.1.1 Food production strategies

For the people ESP (Wosera region), traditional subsistence food production strategies predominate in the three communities. Food gardens observed here are dominated by high intensity of yam, native taro and banana cultivation. Other for food crops such as cassava, sweet potato (*kaukau*), taro *kongkong* (introduced) and pumpkin, sugarcane and *pitpit* are also common throughout the region. Yam, being a food crop, it also has a special ritual and ceremonial value for the Wosera-Abelam people, and because of this ritual significance, it is less likely to be traded for cash. Yam is a seasonal food crop, planted between the months of November and January and harvested between June and July annually. The size of yam yields signifies an individual’s status in this society. Not only the quantity, but also the quality, of harvest determines status of an individual (especially men) or family. The harvests are displayed in a ritual ceremonies to demonstrate skill and handwork. Unlike yams, native taro, banana, sweet potato and various other foods crops can be marketed for cash or exchanged between relatives for cash or kind. These gardens and food exchange systems are commonly observed throughout the study region.

**Significance of yam cultivation**

The Wosera-Abelam and Kwasingua people (ESP) have strong relationships between yam production and traditional leadership. According to most of the participants’ interview responses, an important facet of the yam production system in the region is the strong relationship between yam cultivation and traditional leadership. Because the yam is such a significant food crop, of deep cultural and symbolic significance to this society, it is a cultural norm that the quality and quantity of yields from a yam garden are linked particularly with men’s ability and skills, as well as taboos and secret sacrifices. A common belief associated to the yam tradition is that certain families and clans possess invisible spirits that stimulate their extraordinary ability to grow and harvest yams.

Such achievements imply superior powers for leadership in a particular family, to whom people within the community turn to and have profound respect for the roles of men in such families. This was further explained by an interviewee (elder of a clan) that, during yam planting season, men woke up as early as 6am in the morning and head off to their gardens for planting. The reason for starting at 6am is to avoid meeting or greeting anyone on their way to the gardens. If they were disturbed or seen by someone, the planned planting would be postponed to another time where they are free of
disturbances. This behaviour is based on the traditional belief that seeing someone or being greeted by someone decreases the spiritual and superficial powers of men who are normally in charge during planting seasons. For the people of Wosera-Abelam and Kwasingua, yams yields indicate the leadership and decision making skills and power men possess. For this reason, yam growing is a significant part of their culture and livelihoods.

5.1.1.2 Cash income earning strategies
Interview responses from the study suggest that cash is an important component in the lives of these people. The two main cash earning opportunities are those linked with cash cropping activities and informal markets.

Cash cropping
The study indicates that cash crops are the major sources of income for these communities (see Table 5.13). The two main cash crops grown are vanilla and cocoa. Interest in vanilla, however, has declined over the last decade due to low market prices, leaving communities with cocoa as their only cash crop. Wet cocoa beans are fermented or smoke-dried using semi-permanent fermentries. The dried cocoa beans are sold at the local markets in Maprik and Wewak, usually on quarterly basis. The current market price was PGK 250 for a 63.5 kg bag of dried cocoa beans. Because of the labour intensive tasks involved in processing cocoa beans for export, communities are only able to produce only three 63.5 kg bags per quarter. This gives an estimated income for a family of PGK125 per fortnight from cocoa.

Informal markets
Earnings from informal markets were assessed as another source of income for these communities (see Table 5.13). The informal marketing mainly occurs after hours, but essentially any time of the day or night. The informal marketing activities mainly involve selling of supplies of trade store goods such as kerosene, rice, tinned fish, sugar, salt and cigarettes bought in bulk at the urban wholesales and to a lesser extent informal markets, selling garden produce. Reselling (retailing) involves marking up prices to reflect costs involved and making small quantities available for daily purchase. In two communities (Ugutakua and Jipakim), a number of households reported that they earn up to PGK10 per day from informal markets; mainly from sales of surplus garden produce. Due to the deteriorated road conditions and irregular transport services in these communities, people only allocate two days a week to market their produces. At this rate, informal marketing provides an estimated of PGK40 per fortnight for marketers.
In the third community (Numamaka), people are able to earn up to PGK25 per day from the sales of surplus garden foods and resale of wholesale items. They also allocate 2 days a week to travel to Maprik which is the nearest town to market their products. This could mean a household is able to earn up to PGK50 per fortnight. Although, all three communities allocate 2 days each per week, but the Numamaka community, which is located closer to Maprik, has better access to market facilities than the other two communities.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>Average fortnightly household income sources (PGK) for three ESP communities</th>
<th>Total Ave./Household (PGK)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cash Crop</td>
<td>Main informal markets sources</td>
</tr>
<tr>
<td>Ugutakua</td>
<td>125</td>
<td>40</td>
</tr>
<tr>
<td>Jipakim</td>
<td>125</td>
<td>40</td>
</tr>
<tr>
<td>Numamaka</td>
<td>125</td>
<td>50</td>
</tr>
<tr>
<td><strong>Overall Ave. (PGK)</strong></td>
<td>125</td>
<td>43</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, East Sepik Province communities, June 2012

On average, the households in these communities earn PGK168 on a fortnightly basis (Table 7.13). The main source of income comes from cash crops (PGK125), and to a much lesser extent from informal markets (PGK43). These results indicate that people are more engaged with cash cropping activities as their main source of income. While people may have access to markets to sell their produce, thereby generating regular income, this option is limited by the deteriorated road conditions, which requires significant additional effort to carry bags of cocoa beans to the nearest road sites for transport to the nearest buying points in Maprik and Wewak.

### 5.4.2 Livelihood strategies in East New Britain Province

This section presents livelihood strategies of the Liaga, Manapki and Nabata communities of ENBP. The two main strategies identified in this study are those associated with food production and cash income earning opportunities.
5.1.1.3 Food production strategies
In these communities, subsistence food production systems remain of fundamental importance, despite the development interventions including the oil palm project and other established plantations. Food garden systems observed in this region are similar in their broad characteristics. The production and consumption behaviours and the opportunities available to these communities are similar and include the staple foods; banana, sweet potato and taro 'kongkong' or Chinese taro, in addition to cassava, yam and a variety of fruits and vegetables.

Food gardens observed in these parts of these communities are dominated by intense banana cultivation, grown in conjunction with 'taro kongkong' or Chinese taro. These garden systems are observed throughout the valley floor of the Kerevat Valley including parts of the volcanic plains and foothills of the grass-covered plains and terraces of the Gazelle Peninsula. In this garden system, banana, sweet potato, taro, cassava and a variety of vegetables, fruits and variety of kumu (leafy greens) for green leaves are grown. Amongst these communities, coconut cultivation is an important activity, particularly for the Nabata community. In food production processes, the decisions about strategies for sourcing food are partially influenced by the activities relating to leadership approaches and duties at the household level. For example, the community leaders (i.e., fathers and clan elders) often sacrifice their usual household duties (i.e., gardening and house construction) to attend to community development meetings.

5.1.1.4 Cash income earning strategies
The second livelihood strategy identified in these communities was pursuing opportunities for earning a cash income. These strategies are pursued in three ways. As indicated from the interview responses, cash cropping activities was prioritized highest, incomes from informal markets second, and thirdly the royalties and compensation payments from the KOPDP for the Liaga, the only community receiving compensation so far.

Cash cropping activity
Interview responses from the study indicate that cash crops were their major sources of income. The main cash crop of cocoa is all grown in communities and cultivation of coconut also occurs in Nabata. Wet cocoa beans and kernel coconut meat are fermented or smoke dried in fermentries. The dried cocoa beans and copra (dried kernel meat of the coconut) are sold at the local markets in Kerevat and Rabaul, usually on monthly or quarterly bases. A 63 kg bag of dried cocoa beans is sold at around PGK250. Because of the labour intensive nature of producing these products, communities are only able to produce two 63 kg bags per three months. This gives an estimated income for a family of PGK500 per month from cocoa. A 63 kg bag of copra is sold at the rate of PGK150. Usually an
average of three 63 kg bags of copra is produced per quarter. This could mean that an average family at Nabata earns PGK150 per month from copra and PGK500 per month from cocoa; while families in Liaga and Manapki earn about PGK500 per month from cocoa alone.

**Income from informal markets**

A second source of income is from informal markets. A number of the households at Liaga said that they earn up to PGK20 per day from goods sold through informal markets, particularly from sales of surplus garden produce at the Kerevat local markets. Due to bad road conditions and irregular transport services in their community, they only able to travel three days a week to market their produce. At this rate, they are able to make PGK60 per week, which gives an estimated income of PGK120 per fortnight.

Participants from Manapki responded that they earn up to PGK40 per day from informal sources. An average of three days a week was allocated for informal market activities, so a household could earn up to PGK240 per fortnight. Income from informal markets is mainly derived from sales of surplus garden produce. Also participants attended at the local markets in Kerevat, Rabaul and Kokopo, buying items in bulk from wholesale’s and reselling them at home. They also buy betel nut from within the province mainly for reselling at the local markets. For the people of Nabata, they can earn up to PGK50 per day from the sales of surplus garden foods and betel nuts as their main informal market income sources.

Informal market activities are encouraged due to a serviceable road system built by the Government, enabling Nabata people to make up to four trips per week to market produce. This could mean a household could earn up to PGK400 per fortnight. Apart from the main informal sources, there are also other irregular sources that add to income. These include transport (PMVs), trade stores, community work, wages, varvamele or Sunday-Sunday system\(^2\), tiptip (auction of goods)\(^3\), and property rental. All of these irregular informal income sources add up to give an estimated amount of PGK500, usually on quarterly basis. Since these incomes are earned on irregular basis they are not included in the fortnightly income sources presented in Table 5.5. However, this information is provided to give an appreciation of the communities’ abilities and resourcefulness in generating income for their needs.

\(^2\) *Sande-Sande system*: traditional practice where up to 10 relatives take turns to give same amount of money to one member of the group on a monthly or quarterly basis. Contributions are made mainly in the form of params or fathoms (traditional shell money). An arm-length param is equivalent to PGK5.
Table 5.7: Average fortnightly household income for the three ENBP communities surveyed.

<table>
<thead>
<tr>
<th>Study community</th>
<th>Royalties &amp; Compensations</th>
<th>Cash crop</th>
<th>Main informal market sources</th>
<th>Irregular informal sources</th>
<th>Total Ave./Household (PGK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liaga</td>
<td>No data available</td>
<td>250</td>
<td>120</td>
<td>-</td>
<td>370</td>
</tr>
<tr>
<td>Manapki</td>
<td>No data available</td>
<td>250</td>
<td>240</td>
<td>57</td>
<td>547</td>
</tr>
<tr>
<td>Nabata</td>
<td>No entitlements</td>
<td>325</td>
<td>200</td>
<td>125</td>
<td>650</td>
</tr>
<tr>
<td>Overall/Household Ave. (PGK)</td>
<td>-</td>
<td>275</td>
<td>187</td>
<td>54</td>
<td>522</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, East New Britain Province communities April, 2012

As indicated in Table 6.2, income sources from royalties and compensation payments from the project are yet to be specified. On average, households in these communities earn PGK522 on fortnightly basis, about 50% of which comes from cash crops, 35% from informal markets, and 15% from irregular income sources. The results indicate that people rely on cash cropping activities as their main source of income, and that when they have good access to markets, they can sell their products and generate a regular income.

5.1.1.5 Income from the oil palm development project

At the time of this study, it was difficult to be sure of the precise amount of money paid as royalties and compensation to communities by Kairak Oil Palm Development Project (KOPDP). This information was not available either from the East New Britain Provincial Government Office, the company’s office or from other recipients. However, according to the KPODP proposal documents, it is anticipated that development related payments will be paid on a regular basis and the communities are expected to be paid substantial amount of money and royalties and compensations (KPODP, 2009). Responses from the respondents also revealed that payments as royalties and compensations have not been fully detailed as yet. It is unknown what royalties, land owners have received so far, or will be entitled to over time. According to an interviewee, it is understood that there are two main income earning opportunities from this development: royalties and compensation. Royalties are to be
paid to the communities for the use of land; compensation payments are intended for the damage to
the environment.

5.4.3 Livelihood strategies for Western Province
As with ESP and ENBP, the main livelihood strategies found in WP were also subsistence food
production and cash income earning strategies. However, WP has various and increased cash earning
opportunities compared to ESP and ENBP. The discussion in the following sections will provide
details of these.

5.4.3.1 Subsistence food production strategies
People across the three case communities studied shared varied social and cultural approaches to food
production, consumption and exchange. For example, the staple food eaten by the two communities of
Bultem and Atemkit are native taro, wild animal meat, fruits and sugarcane, while sago, yam, fish,
banana, wild fruits and coconut are eaten in Bige (Bourke and Harwood, 2009). Apart from the main
food crops grown and consumed, other varieties such as sweet potato, cassava and variety of other
introduced vegetables and livestock were also found to exist (OTDF 2008; Mulung 2012).

The study also found that subsistence food production strategies were in part linked to communities’
decision-making behaviours in responding to the OTML’s sponsored activities. For example, the
Village Planning Committee (VPC) leaders observed in these communities often forgo their usual
gardening (including their foraging) activities to attend to OTML’s Community Mine Continuation
Agreement (CMCA) meetings. In this region, subsistence food production strategies are dominated by
foraging, hunting and gardening activities (Bourke and Harwood, 2009; Mulung 2012).

In this study region, the importance of nomadic and foraging activities cannot be overstated, and these
remain a key part of their daily practices for subsistence. In this case, hunting wild animals, gathering
and collecting other wild resources (i.e., plants, birds and marine life) require time and effort. As
described by Roscoe (2002) and also noted in (Mulung 2012), people in this part of the country derive
about 75% of their subsistence calories from foraging in the wild. This applies also to the people in
other Upper Ok Tedi villages of Wopkaimin and Awin tribes. These food sources make up at least 30-
40% of the daily meal. For Bige community in the Lower Ok Tedi region, sago palm, wild fruits and
marine resources provide the main sources of food. These food sources make up at least 80–90% of
the daily calories (Roscoe, 2002). Hunting and collection of forest foods for these communities takes
several days at a time, requiring the men to camp out in the valleys and mountains.
In addition to subsistence food production systems and nomadic foraging activities, subsistence food gardens are also an important source of food for the people of Bultem, Atemkit and Bige, although to a lesser extent compared to subsistence and nomadic sources. This was evident in the responses gathered from the participants about where and how the food is sourced and consumed. These responses indicated that foods from garden represent about 10–15% of most meals consumed by the household, especially for the Bultem and Atemkit. The generally low supply of garden food was consistent with similar study conducted by Mulung (2012), who found about 4 percent of the meals eaten by neighboring Yonggom villages, also impacted by OTML, were from garden sources. The native *taro tru* is a major staple food for Bultem and Atemkit, and the Bige people cultivate a range of banana varieties as a basic staple.

The final livelihood strategy of importance is the OTML-supported food security program. This program commenced in 1996, due to community concerns over low supply of traditional food sources, which will be discussed in further detail below. Mine-impacted communities, particularly those villages within the proximity of Tabubil, began to rely more on imported or processed foods due to greater access to money and needing to prioritise less time on collecting traditional foods. Hyndman (1995) also described how, in the 1970s, the people of Wopkaimin were entirely subsistence-oriented and self-sufficient in terms of dietary requirements; and how this changed from 1980s; since that time they have become increasingly dependent on a diet without many of their subsistence foods, especially their *‘taro tru’* or Colocasia taro. This was largely because these villages received large royalties and compensation payments from OTML, which they used to purchase foods at the shops. This encouraged a reduction in the supply of locally-produced foods.

My observations and discussions with Ok Tedi Fly River Development Program (OTFRDP) staff suggest that there has been considerable focus on food security programs in the mine impact communities, including the three study communities, since this situation became evident. However, the success in terms of quantity and quality of food production and adoption of new farming approaches has been minimal. People appear to have altered their lifestyles to be more engaged with other household and community activities, such as sports, hunting and house construction. Although, shifting cultivation practices - a technique used in many parts of PNG (Bourke and Harwood 2009) - are common in this region, the quality and quantity of food produced here is minimal as most participants rely on processed food purchased with the royalties and compensation moneys received from OTML. Technology adaption and innovation of new farming skills is also low in the area. This is primarily linked to low level of literacy in the region.

Today, many people in the region find it difficult to adapt new skills to traditional staple gardening practices when they have little experience with growing staple crops, particularly the introduced crops. This often discourages people’s interests in garden food production. Furthermore, my personal
engagement with these communities in the period 2003–2010 also confirmed that transitions from a base of semi-nomadic food production strategies to more sedentary agricultural practice is slow and will require extended periods of time to take effect. Until then, there may be a lack of secure local food sources for these communities. However, Mulung (2012) and Jackson (1998) observed that the difficulties associated with the loss of traditional food sources has also generated awareness among the communities of the need to do more gardening to secure the traditional food supplies for their household.

5.1.1.6 Cash income earning opportunities

Three sources of cash income earning strategies were identified in these communities. These are income from the mine, informal markets, and cropping activities, as presented in Table 5.8.

Table 5.8: Average fortnightly household income for the three WP surveyed communities.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>Royalties &amp; Compensation</th>
<th>Cash crop</th>
<th>Informal markets</th>
<th>Local small business</th>
<th>Sale of garden foods</th>
<th>Wages</th>
<th>Total Fortnightly Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bultem</td>
<td>763</td>
<td>0</td>
<td>200</td>
<td>200</td>
<td>20</td>
<td>476</td>
<td>1659</td>
</tr>
<tr>
<td>Atemkit</td>
<td>763</td>
<td>0</td>
<td>160</td>
<td>170</td>
<td>20</td>
<td>476</td>
<td>1589</td>
</tr>
<tr>
<td>Bige</td>
<td>160</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td>50</td>
<td>420</td>
<td>870</td>
</tr>
<tr>
<td>Overall Ave./Income</td>
<td>562</td>
<td>20</td>
<td>140</td>
<td>263</td>
<td>30</td>
<td>457</td>
<td>1373</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, WP communities, Aug 2012; OTML, 2012

On average, households in these communities earn PGK1373 per fortnight. The main contributors to income are royalty payments (PGK562; 41%) and wages (PGK457; 33%), with the remainder raised through other sources such as cash crops, informal markets, small businesses and the sale of garden foods.

Income from the mine

Mine-related payments are the main and often the only source of cash income for these three communities. There are four main sources of cash income-related opportunities in this category.
These are royalties, compensation, development funds and business development grants. Royalties are paid on quarterly basis to the principal/primary land owners of the mine area. In this case study, the Bultem and Atemkit communities are amongst the principal beneficiaries. Compensation, locally referred to as *compo* payments, is money paid annually for damages caused to the environment (forests, water, land and property); Bige is one of the beneficiaries of these payments. With such compensation payments, there are also special payments for particular damages, such as damage of sago palm stock and other economic plants in addition to valuable livelihood items. These payments can be paid at any time of the year, depending on the nature of the damage.

The development funds are monies from Community Mine Continuation Agreements (CMCA) arrangements, paid by OTML to communities through their local trust foundations and Village Planning Committees (VPCs). They are only used for community-wide development purposes. With the CMCA funds, communities are able to purchase materials such as out-board motors, dinghies, vehicles, sewing machines, fishing nets and baking ovens that facilitate income earning activities. ‘Business development grants’ are also monies provided to communities by OTML, as capital funds for venture business activities to the community’s development. For example, trade stores, poultry and piggery farms, fishponds and property investments have been some of the business started from the development grants.

These cash income earning strategies are consistent with the records provided by OTML and OTDF, which indicate that communities received regular payments throughout each year. Other research (e.g, Jackson 1998; Mulung 2012) also confirms that the people of Bultem, Atemkit and Bige are amongst the CMCA villages that receive various benefits in the form of cash, projects and development programs. These are generally paid on a monthly, quarterly and annual basis.

**Income from informal markets**

A second source of income is from informal markets. This is an emerging source of income in these communities, which involves the general marketing of goods and services. According to a female survey participant, this business emerged as result of women taking a keen approach to buying bulk items at wholesale prices and re-selling them (with marked-up prices) at homes and roadside stalls. She also confirmed that this is fast growing business strategy. The informal business sector is considered to be growing in response to a low supply of goods and items to the communities in comparison to their needs. Although it is expensive to buy and transport these items to such remote locations, informants advised that the profits were still higher than the expenses. The items for sale are usually brought in from Kiunga, Tabubil and even further, from Port Moresby, Lae, Wewak and Mt. Hagen. I learned that, over the last ten years or so, there has been an increase in volume and type of items being sold as well as numbers of people engaged in this type of business.
As observed along the Kiunga-Tabubil Highway and in the study communities, there are several roadside markets being constructed by OTML, where people were sell processed foods and other items at the markets and at their homes. Mulung (2012) made similar observations in the neighboring Yonggom villages of Moian and Yulawas, noting that these villages were engaged in sales of trade store goods, and outboard motor fuel and oils and lubricants, as alternate sources of income. However, the villages experienced low and irregular supplies of these goods because of limited access to transport, road and communication facilities compared to Bultem, Atemkit and Bige, which have better transport access to conduct such businesses. An important commodity in the informal market sector is sale of betel nut (Areca spp.) and mustard as sources of income, especially for women. It was difficult to establish accurately the income generated from these sales. However, an estimate was made based on my discussions with two respondents who were in informal businesses. A woman from Bultem village shared her experience of her betel nut business. She stated that:

Usually I freight a 20kg bag containing about 2000 betel nuts and mustard at the cost of PGK800 on a fortnightly basis from Wewak. I sell these nuts at PGK1.00 per nut at the local markets in Tabubil or in the village. After sales I earn about PGK1200 profit per fortnight. This at least supports me and my family on fortnightly basis (Author’s Survey data, case village, Jun, 2012).

Similarly, a local businessman in Kiunga stated that:

I started my initial vending business with betel nuts at the roadside in Kiunga in 2002. My daily returns at that time were about PGK100–200 per day. Most part of this money I saved it away in the bank because I had a plan to increase my sales. After one and half years (which was in June, 2004) of operations, I already had about PGK3000–4000 in my account. I then freighted two 25kg bags of betel nuts including the mustard from Wewak. I paid a thousand ‘kina’ (PNG currency) each for the two bags and in total it costed me about PGK3000, including the freight and associated costs. I estimated about 3000 nuts in each of the bags and sold them for PGK0.80 per nut. After expenses I made about PGK1800 profit per fortnight. With this money I also ventured into other activities including a tucker shop and a bottle shop. And today, almost 10 years later, I am happy that I own two large wholesaling businesses in Kiunga (Author’s surveys Kiunga, Aug, 2011).

These statements indicate the importance of the informal market as one of the main sources of income, for at least some households. Moreover, it is evident that informal business is also becoming self-sustaining in itself, in which proceeds from these markets are diversified into other promising business ventures.
Income from cash cropping activity
The third income earning opportunity in this region is cash cropping. This applies only to Bige, as there is no evidence of cash crop activity in the two communities of Bultem and Atemkit. My own experience and records from OTML confirmed that vanilla cash crops, introduced by OTML during 2005–2010 in the two communities Bultem and Atemkit, were not sustained. This was mainly because farmers lacked skills and technical support from OTML and Government, and at the same time climatic conditions were unfavorable for these crops (OTDF 2007; pers comm. Tike Kulingim, June, 2012). The only successful cash crop activity recorded was for rubber, *Hevea* spp. grown in the Bige area. The Bige community has been planting and harvesting rubber for more than 30 years, and it has been one of their key income sources. According to Allen (2009), rubber was introduced to PNG in 1903 and in Western Province in the 1960s. It can be successfully grown in altitudes upwards of 700 metres above sea level, with an annual rainfall between 1500 mm to 5000 mm (Allen et al., 2009). It is considered a minor commodity compared to other agriculture crops, but when the WP production is considered jointly with that grown in other parts of PNG, including Cape Rodney in Central Province and Gavien in East Sepik Province (Mulung 2012; Allen *et al.* 1995), it has the capacity to constitute a viable industry.

Since there are no other cash crops in this region, Ok Tedi Mining Limited (OTML) and PNG Sustainable Development Program Limited (PNGSDPL) are promoting rubber as the major cash crop for the people of Western Province. It is being vigorously promoted based on its perceived comparative advantage over alternative cash crops in the region. Although OTML and PNGSDPL are keen to support rubber in this region, there are considerations that need addressing. However, my personal experience and observations working with the rubber growing communities in this region, the culture of growing rubber as cash crop was yet to achieve any significant uptake. This view also confirms previous studies (e.g., Rogers, 1995; Pannell *et al.* 2006; and Mulung 2012) who noted that the diffusion and acceptance of rubber as cash crop is still in initial stages in this region, and requires appropriate skills, knowledge and training. This means communities at this stage are not equipped with necessary technical knowledge, and require inputs from OTML, PNGSDPL and government to make further progress in establishing rubber as a commodity for export from Western Province.

5.4.4 Summary of livelihood strategies
In summary, these results suggest that the subsistence food production systems and the associated subsistence economy remain of fundamental importance in all of the three regions studied. For example, in ESP, a region that is yet to be impacted by major development and with limited exposure to outside influences, subsistence food production strategy remains the major livelihood and survival
strategy. At the same time, people are willing to engage into options that are available to them to pursue financial opportunities. On the other hand, the communities of ENBP are engaged strongly in both the subsistence and cash income earning opportunities. Due to an improved asset-bases (i.e., roads links, schools, access to markets and services), these communities pursue both subsistence and cash income earning simultaneously.

WP communities, despite the scale of Ok Tedi Mining Limited (OTML) development interventions, also continue to see subsistence food production as relevant, but to a lesser degree. This is due partly due to the traditional emphasis on foraging rather than gardening, and partly to the money they received from OTML as royalties and compensations allowing them to rely more on store-bought food. In contrast to the other two regions, WP has seen increased economic opportunities reflecting the relatively greater significance of the cash economy. This was driven largely by the opportunities provided by OTML as the main source of income and influence to these communities, in contrast to the lack of such opportunities or interventions on ESP and ENBP.

5.5 Consumption and spending behaviours

This section presents the consumption and spending behaviours of these study communities. These are considered important as described Chapter 2.2, and – as further noted by Mulung (2012) and Anderson (2015) – that they are part of PNG livelihoods and decisions systems. It was also evident throughout the study that these factors also influenced leadership decision at the household levels, particularly decisions about what foods and items were sourced and consumed by the people. Spending behaviour depends on what is being consumed and the rate at which these foods and items are consumed. This also reflects the amount of income earned available to be and spent on those goods and items. Mulung (2012) notes that the livelihood decisions of these communities reflect the links between cash income strategies and how much is consumed and spent. Spending behaviours were classified into two categories; regular, and irregular or special items. Regular spending refers to expenses that communities incur on a daily, weekly or fortnightly basis. In this study, a fortnightly cycle is used as the unit of analysis for this behaviour. The irregular or special items spending are those valuable items that requires long period of time to budget and making savings to acquire them. In these communities, special goods and items are usually bought on an annual basis.

5.5.1 East Sepik Province

This section discusses consumption and spending behaviours in the East Sepik Province study communities.
5.5.1.1 Consumption behaviours

The staple foods sourced and consumed in these communities are described in Section 5.3.1. People in this part of the region consume ka the local name for yam (*Dioscorea* spp.), *lapu* or banana (*Musa* spp.), *kaukau* (sweet potato), *mai’i* or (native taro, *Colocasia esculenta*) and sago (*Metroxylon sagu*) as their main regular food. Other food crops grown and consumed are cassava, taro *kongkong* (Chinese taro), coconuts and variety of fruits and vegetables. All of these foods are locally grown in household cultivated gardens. There is an adequate supply of food grown within these communities. However, despite an adequate supply of garden produce, demand for processed foods and items such as rice, tinned fish, flour, salt, biscuits and vegetable oil from supermarkets was also high. A significant obstacle to obtaining foods other sources such as supermarkets is that these are located in Maprik, which is about three to four hours walk followed by an hour by public motor vehicle (PMV) from Wosera.

Apart from food, other goods and items such as cooking utensils, laundry powder, toiletries, garden tools, cigarettes and beverages are also purchased. People also need money for essential services and items including school fees, transport costs and mobile phones. These foods, goods and services are those that the people themselves cannot produce, but they are able to buy them with income earned from cash earning activities. The cash earning activities are described in Tables 5.4, 5.7 and 5.8 together with data relating to the household spending behaviours of each of these communities. The spending data are described in two categories, regular and special (irregular) items, as noted above.

5.5.1.2 Spending behaviours

**Regular Spending**

Regular spending describes the expenses that communities incur on a daily, weekly or fortnightly basis. In this study, a fortnightly cycle was used as the unit of analysis for this behaviour. Fortnightly household spending includes money spent on obtaining a variety of food, goods and services, which are detailed in Table 5.9. This table provides information on common foods and items purchased and cost involved for obtaining them. Overall spending (PGK 123) in Jipakim is low compared with Ugutakua and Numamaka (PGK 185-6). There are two main reasons why low spending was experienced in Jipakim. Firstly, according to the ward member, the village is small community with small population and most of their time is devoted to gardening. Furthermore, he explained that because of the remoteness of their location to shopping centres in Maprik and Wewak, they only occasionally travel to buy store goods. Secondly, the village set a target to save money through contributions from each of the households to purchase a new public motor vehicle (PMV), reducing
the household spending allocation. This possibly explains the low spending behaviours recorded in the Jipakim community at the time of this study.

Table 5.9: Average fortnightly spending for the three surveyed ESP communities.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>Regular household purchase PGK/Fortnight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supermarket</td>
</tr>
<tr>
<td>Ugulakua</td>
<td>102</td>
</tr>
<tr>
<td>Jipakim</td>
<td>61</td>
</tr>
<tr>
<td>Numamaka</td>
<td>117</td>
</tr>
<tr>
<td>Over Ave. (PGK)</td>
<td>93</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, East Sepik Province communities, Jun 2012

Overall across the three communities, 56% of the fortnightly expenditure of the household is spent on food items from supermarkets and trade stores. Another 11% is spent on transport and other items. About 7% each is spent on alcohol and cigarettes, mobile cards and fuels, totalling 21%. Other essential items include toiletries, foods from gardens and church offerings, accounting for 12% of the household fortnightly income. This indicates that communities spend more on processed foods from supermarkets than other items, including locally produced foods from the garden.

Irregular Spending

Apart from the regular spending behaviour, communities also spend occasionally on special items which are important to their livelihood, which requires saving for a long period of time; these items are usually only bought on annual basis. The main types of these items and goods purchased are presented in Table 5.10, along with the amount of money spent in obtaining them. As above, lower spending (PGK652) occurred in Jipakim compared to the other two communities. The above explanation provided by their ward member also explains their low spending in special items here.
Table 5.10: Average irregular household spending for the three communities surveyed in ESP.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>Special or irregular household spending items (PGK)</th>
<th>School fees</th>
<th>Bride price</th>
<th>Funeral Special feasts</th>
<th>Cooking utensils</th>
<th>Clothing</th>
<th>Mobile phones</th>
<th>Holidays</th>
<th>Total Ave. (PGK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ugutakua</td>
<td></td>
<td>400</td>
<td>100</td>
<td>50</td>
<td>90</td>
<td>100</td>
<td>109</td>
<td>40</td>
<td>300</td>
</tr>
<tr>
<td>Jipakim</td>
<td></td>
<td>530</td>
<td>150</td>
<td>40</td>
<td>50</td>
<td>71</td>
<td>74</td>
<td>53</td>
<td>214</td>
</tr>
<tr>
<td>Numamaka</td>
<td></td>
<td>510</td>
<td>122</td>
<td>62</td>
<td>111</td>
<td>82</td>
<td>82</td>
<td>42</td>
<td>354</td>
</tr>
<tr>
<td>Over Ave. (PGK)</td>
<td></td>
<td>480</td>
<td>124</td>
<td>51</td>
<td>84</td>
<td>84</td>
<td>80</td>
<td>45</td>
<td>289</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, East Sepik Province communities Jun, 2012

On average across the three communities, about 45% of the annual irregular expenditure of the household is spent on school fees for their children. Another 27% is spent on taking holidays or visiting relatives in other centres or provinces, and 11% on bride price, which is mostly given to relatives in the village. This indicates education for children is a high priority compared to other areas of spending in the communities. Other special items include funerals, special feasts, clothing, cooking utensils and the purchase of mobile phones, which together adds to 17% of the household annual irregular expenditure. Tables 5.9, 5.10 and annual income in Table 5.6 suggest that expenditure exceeds income, particularly Ugutakua and Numamaka. This suggest that not all income sources were captured during the survey. There are other income sources (mostly on irregular basis) from bride price payments, sale of livestock (chicken, pigs) and fresh meat from wild. This also explains why communities are most vulnerable to economic risks, as presented in Figure 5.3.

5.5.2 East New Britain Province consumption and spending behaviours

This section consumption and spending behaviours of the ENBP study communities.
5.5.2.1 Consumption behaviours

The staple foods include banana, sweet potato and *taro kongkong* or Chinese taro as well as other food crops such as cassava, yam and variety of fruit and vegetables. All of these foods are grown in their gardens. Unlike Western Province, where limited food is supplied from peoples’ own gardens, these communities grow sufficient food to sustain the entire population. Despite having enough food from their own garden, communities lacked fresh meat in their daily diets. This encouraged communities to obtain protein from local supermarkets in Kerevat, Rabaul and Kokopo. The main food purchased here includes: rice; tinned fish; sugar; coffee; flour; vegetable oil; fresh meat; and biscuits. Apart from food, other goods and items are also purchased here. These include such things as: cooking utensils; laundry powder; toiletries; garden tools; cigarettes; and beverages. Families also pay for other essential services and items including: school fees; transport costs and mobile phones. Community members buy the food, goods and services that they themselves are unable to produce, with the money earned from cash earning activities (see Table 5.7).

5.5.2.2 Spending behaviours

**Regular spending**

The household fortnightly spending includes money spent on obtaining those foods, goods and services (Tables 5.11 and 5.12). These tables also provide information on common food and items purchased and the costs involved for obtaining them.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>Regular household purchase PGK/Fortnights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food from stores</td>
</tr>
<tr>
<td>Liaga</td>
<td>70</td>
</tr>
<tr>
<td>Manapki</td>
<td>109</td>
</tr>
<tr>
<td>Nabata</td>
<td>122</td>
</tr>
<tr>
<td>Over Ave. (PGK)</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, East New Britain Province communities, Apr 2012
Special items spending

The main types of special items and goods purchased, and the amount of money spent in obtaining them, are shown in Table 5.12.

Table 5.12: Average annual spending for the three ENBP communities surveyed.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>School fees</th>
<th>Bride price</th>
<th>Funeral</th>
<th>Special feasts</th>
<th>Cooking utensils</th>
<th>Clothing</th>
<th>Mobile phones</th>
<th>Holidays</th>
<th>Total Ave. (PGK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liaga</td>
<td>153</td>
<td>79</td>
<td>32.5</td>
<td>62.5</td>
<td>76</td>
<td>66</td>
<td>49</td>
<td>367</td>
<td>884</td>
</tr>
<tr>
<td>Manapki</td>
<td>538</td>
<td>140</td>
<td>63</td>
<td>99</td>
<td>78</td>
<td>78</td>
<td>46</td>
<td>813</td>
<td>1864</td>
</tr>
<tr>
<td>Nabata</td>
<td>338</td>
<td>66</td>
<td>63</td>
<td>59</td>
<td>46</td>
<td>74</td>
<td>26</td>
<td>350</td>
<td>1020</td>
</tr>
<tr>
<td>Over Ave.</td>
<td>336</td>
<td>95</td>
<td>53</td>
<td>73.5</td>
<td>67</td>
<td>73</td>
<td>40</td>
<td>593</td>
<td>1256</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, East New Britain Province communities, Apr 2012

These results suggest that on average across the three communities, 47% of the annual irregular expenditure of the household is spent on holiday trips to visit relatives within PNG and overseas. This amounts to close to half of the special item amount budget, indicating the very high cost of travel in PNG – this is especially marked for island communities. Another 27% is spent on school fees for children and the remaining 26% is spent on other items.

5.5.3 Western Province consumption and spending behaviours

This section discusses Western Province study communities’ consumption and spending behaviours.

5.5.3.1 Consumption behaviours

The staple foods found in WP communities include native taro, wild animal meat, fruit and sugarcane for Bultem and Atemkit, and sago, banana, fish, yam, wild fruits and coconut for Bige. Other varieties of food, such as sweet potato, cassava and variety of other introduced vegetables, and livestock, are also eaten in this region. All of these foods are grown from their gardens, except sago that is harvested from wild stock. However, the supply of these staple foods is low and could not sustain the entire
population. Therefore, communities obtain food from other centres. Local supermarkets and trade stores in Tabubil and Kiunga provide alternative sources where communities buy their foods. The main foods purchased include rice, tinned fish, sugar, coffee, flour, vegetable oil, fresh meat and biscuits.

Apart from food, other goods and items are also purchased. These include cooking utensils, laundry powder, toiletries, garden tools, cigarettes and beverages. People also pay for other essential services and items including school fees for children, transports costs and mobile phones. Mulung (2012) describes these goods and services as those that cannot be produced or provided by households but can be bought with the money earned from cash earning activities. Table 5.8 gives an overview of cash earning activities and presents the average fortnightly income that study site households earn in their communities. Tables 5.13 and 5.14 present the household spending behaviours of each of these communities.

The consumption behaviours assessed across these communities show that people source foods and other important items from supermarkets and trade stores over those locally produced particularly for the two communities of Bultem and Atkemit. This implies that there is low supply of locally produced foods and items. It also implies that people are capable of buying these items if they choose to.

5.5.3.2 Spending behaviours

Regular spending
The household fortnightly spending includes money spent on obtaining those foods, goods and services provided in Table 5.13. This data provides information on common foods and items purchased and cost involved for obtaining them.
Table 5.13: Average fortnightly spending for the three Western Province surveyed communities.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>Regular household spending item (PGK)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food from stores</td>
</tr>
<tr>
<td>Bultem</td>
<td>240</td>
</tr>
<tr>
<td>Atemkit</td>
<td>200</td>
</tr>
<tr>
<td>Bige</td>
<td>70</td>
</tr>
<tr>
<td>Overall Ave. (PGK)</td>
<td>170</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, Western Province communities, Aug, 2012, OTML, 2011

Overall across the three communities, 42% of the fortnightly income of the household is spent on food items from supermarkets and trade stores, and another 18% is spent on food from local markets. This indicates an increase in the consumption of supermarket and trade stored purchased goods and a decrease in the consumption of garden foods, compared to the time before the mine (see Section 5.5.3). Another 11% is spent on alcohol and Cigarette. Other essential items including transport, toiletries and the others, totalling 29% of the household weekly expenditure. This data also clearly reflect the greater access to money (royalties and compensation payments) from OMTL as major beneficiaries for the two communities of Bultem and Atemkit, compared to community members of Bige who receive less as secondary beneficiary from compensation payments.

**Special items spending**

The main types of items and goods purchase are shown in Table 5.14, as well as amount of money obtaining them.
Table 5.14: Special item spending for the three surveyed communities.

<table>
<thead>
<tr>
<th>Study Community</th>
<th>School fees</th>
<th>Bride price</th>
<th>Funeral</th>
<th>Special feasts</th>
<th>Cooking utensil</th>
<th>Clothing</th>
<th>Mobile phones</th>
<th>Sports and entertainments</th>
<th>Holidays</th>
<th>Total Ave</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bultem</td>
<td>3000</td>
<td>200</td>
<td>500</td>
<td>4000</td>
<td>250</td>
<td>300</td>
<td>100</td>
<td>400</td>
<td>4000</td>
<td>1275</td>
</tr>
<tr>
<td>Atemkit</td>
<td>2000</td>
<td>300</td>
<td>300</td>
<td>1000</td>
<td>300</td>
<td>400</td>
<td>100</td>
<td>200</td>
<td>2000</td>
<td>6600</td>
</tr>
<tr>
<td>Bige</td>
<td>2000</td>
<td>200</td>
<td>200</td>
<td>300</td>
<td>200</td>
<td>200</td>
<td>100</td>
<td>100</td>
<td>200</td>
<td>3500</td>
</tr>
<tr>
<td>Overall Ave. (PGK)</td>
<td>2333</td>
<td>233</td>
<td>333</td>
<td>1767</td>
<td>250</td>
<td>300</td>
<td>100</td>
<td>233</td>
<td>2067</td>
<td>7950</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, Bultem, Atemkit and Bige communities, Jul 2011; June 2012

Overall across the three communities, 29% of the annual expenditure of the household is spent on school fees for children, 26% on holidays away from their homes, and 22% on special feasts. Other special items include funerals, sports and entertainments, clothing, cooking utensils, bride price and use of mobile phones, totalling 23% of the household annual expenditure.

Bultem residents spend four times more than Bige and two times more than Atemkit on special items. This, according to the participants’ responses and my personal observations, is attributed to advantage that Bultem has over the other two communities in terms of better access to services and an increase in population. In spite of low income in Bige, they still have to spend the same on irregular items (e.g., school fees, bride price, cooking utensils, and clothing) as other communities impacted by OMTL, to try to meet their social obligations.

5.5.4 Summary of consumption and spending behaviours

This section discusses the summary of the consumption and spending behaviours of the studied communities across the three regions. Table 5.15 shows the summary of the average expenditure by category by region.
Table 5.15: Average spending behaviours in the three regions.

<table>
<thead>
<tr>
<th>Regular/fortnightly spending</th>
<th>ESP</th>
<th>ENBP</th>
<th>WP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food from Supermarket</td>
<td>PGK 93 (56%)</td>
<td>PGK 100 (56%)</td>
<td>PGK 170 (42%)</td>
</tr>
<tr>
<td>Local foods</td>
<td>PGK 6 (4%)</td>
<td>PGK 20 (11%)</td>
<td>PGK 73 (18%)</td>
</tr>
<tr>
<td>Alcohol &amp; Cigarette</td>
<td>PGK 12 (7%)</td>
<td>PGK 15 (8%)</td>
<td>PGK 43 (11%)</td>
</tr>
<tr>
<td>Others</td>
<td>PGK 54 (33%)</td>
<td>PGK 44 (25%)</td>
<td>PGK 120 (29%)</td>
</tr>
<tr>
<td>Total</td>
<td>PGK 165 (100%)</td>
<td>PGK179 (100%)</td>
<td>PGK 406 (100%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Irregular /special spending</th>
<th>ESP</th>
<th>ENBP</th>
<th>WP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holidays</td>
<td>PGK 289 (27%)</td>
<td>PGK 593 (47%)</td>
<td>PGK 2067 (29%)</td>
</tr>
<tr>
<td>School fees</td>
<td>PGK 480 (45%)</td>
<td>PGK 336 (27%)</td>
<td>PGK 2333 (26%)</td>
</tr>
<tr>
<td>Bride Price/Feasts</td>
<td>PGK 124 (12%)</td>
<td>PGK 95 (8%)</td>
<td>PGK 1767 (22%)</td>
</tr>
<tr>
<td>Others</td>
<td>PGK 167 (16%)</td>
<td>PGK 232 (18%)</td>
<td>PGK 1783 (23%)</td>
</tr>
<tr>
<td>Total</td>
<td>PGK1060 (100%)</td>
<td>PGK 1256 (100%)</td>
<td>PGK7950 (100%)</td>
</tr>
</tbody>
</table>

Table 5.15 shows that average consumption and spending behaviours varied in some respects across the three regions. These variations are illustrated in Figures 5.3 and 5.4.

![Figure 5.3: Proportion of regular expenditure by major categories in the three regions.](image)

ESP and ENBP communities spent similar proportions on food from supermarkets and on local foods; the proportion of spending on average, 56% of household expenditure in ESP was on supermarket
foods. About 21% was spent on cigarette and alcohol others, followed by 12% on other items (see Tables 5.12, 5.13 & 5.14) and about 11% was spent on locally produced foods. As with ESP, ENBP spends 56% of expenditure on foods from the supermarkets, and 25% on other items, about 11% on foods from local markets and 8% on items such alcohol and cigarettes. In contrast to ESP and ENBP, WP spends 42% on foods from supermarket, followed by 29% on other items, 18% on local foods and about 11% on alcohol and cigarette.

These results indicate that ESP and ENBP were spending more on foods from the supermarkets than WP. One possible reason because of the saving priorities that each region prioritize to purchase special items on annual basis.

![Figure 5.4: Proportion of irregular expenditure on major categories in the three regions](image)

The proportion who indicated on irregular/special expenditures show that on average about 45% of the expenses are on school fees for children in ESP. Another 27% spent on holidays, 17% on other items and about 11% on bride price/feast. Relatively, ENBP’s highest expenditure is on holidays with 47%, followed by 27% on school fees for children, 18% on other items and 8% on bride prices/feasts. In WP, on average 29% of the annual expenditure is on school fees, followed by holidays with 26%, other items with 23% and bride price/feasts as their lowest spending with 22%.

These results suggest that there are significant variations in the ESP and ENBP communities on the priorities of their expenditures. For example, ESP spends more on school fees for their children than the other two regions. In contrast to ESP, ENBP prioritize on holidays as their most preferred expenditure activity. The results for WP, showed good distributions of their priorities. This means all four main expenditure activities were given considerable attention. This reflected that WP has the
capacity to spend those activities. Simply because of their strong financial, physical and human assets-based as discussed in Chapter 5.2.3.

The high irregular costs are attributed to number of reasons. Firstly, the improved transport systems, including air, sea and roads, provide the flexibility for them to travel frequently. Secondly, the highest holiday spending of PGK813 for the residents of Manapki implies that people travels to visit their home provinces. As observed in this area, the residents are settlers working on cocoa plantations, and make a good amount of money from sale of cocoa beans to make holidays trips, mainly on annual basis. For the people of Liaga and Nabata, the people are indigenous inhabitants who seem to have similar number of relatives living outside of ENBP. This was reflected in the amount of money spent for the both communities.

Together, the results presented above and those of incomes data presented in Tables 5.6-5.8, the results suggest that generally peoples’ incomes are greater than expenses for all three regions, particularly in comparison to their fortnightly expenses presented in Tables 5.9, 5.11 and 5.13 all three regions. The fortnightly household incomes were PGK165 for ESP, PKG406 for ENBP and PGK 1373 affording enough of a difference to save for the purchase of special items. However, ESP expenses were almost equal to income with a difference of 3 PGK. This could mean they may have other sources of income that has not been captured in this study. However, the irregular or special items expenses seemed to have over exceeded the households’ fortnightly income across the three regions. At this stage, these expenses were not considered critical as these occur on an occasional basis, which means people may have long periods of time to save and purchase them.

5.6 Communities’ vulnerability conditions

As stated in Chapter 2.10.2, vulnerabilities are important because they are part of the livelihood systems of these communities. They were considered as factors as they may influence community’s leaders’ decision-making behaviours. In this assessment, the study assessed risks such as threats to productivity, sustainability and welfare as well as opportunities that exist to mitigate risks in these communities. Also, respondents were also asked to identify consequences - which risks factors potentially have the greatest impact such as financial loss, livelihood loss and/or loss of life.

Major risks assessed in this study were shocks, weather, and fluctuations in markets, adverse political decisions and environmental and social adversity. Participants were asked to identify the types of risks and list them as most likely and less likely to occur. The participants were also asked to identify consequences - which risks factors potentially have the greatest impact such as financial loss, livelihood loss and/or loss of life. As with analysis of livelihood assets above, a Likert Scale was used
to assess respondents' assessment of risk types and of appropriate responses to these risks. Results are presented in the following sections.

5.6.1 Vulnerabilities – East Sepik Province

The sample size across the three communities was 42. The proportions of respondents identifying major risk categories, and those most likely to impact on their community, are shown in Figure 5.3.

![Bar chart showing proportions of responses for major risks and greatest potential risks](chart.png)

Figure 5.5: ESP community respondents' assessment of (A) major risks types and (B) greatest potential risks to their communities.

5.6.1.1 Types of risks

Figure 5.3A shows the perceived likelihood of major risk occurrence. These individual village results (not presented) were generally similar. Economic risks were those most commonly identified, at around twice the proportion each of the other risk categories. These results reflect threats, particularly market price fluctuations, that people experience, and that - in this case - discourage people from growing cash crops.

Figure 5.3B shows the respondents' assessment of the greatest potential impacts that may occur in these communities. Whilst a similar proportion assessed economic risks as having the greatest potential impact as had assessed it as the major risk type, social risks were identified as of potentially more consequence than environmental and political risks.

These results indicate the importance of cash cropping activities to these communities, as cash crops are their main source of income. They depend on fair market prices and any adverse fluctuation has major consequence.
Immediate attention from families/relatives
local authorities (Govt, churches)

Vulnerabilities addressing Strategies

Responses

Yes No Unsure

Figure 5.6: Proportion of respondents identifying specific strategies to vulnerability (A), and who felt they were prepared for times of vulnerability (B)

I also assessed how these risks were managed in times of disasters, and how these communities felt about their preparedness to face such risks.

5.6.1.2 Risk management strategies and preparedness

The overwhelming majority, 81%, of respondents advised that relatives and friends are the immediate ones who can help them in time of vulnerability. Only 19% of the participants turn to local authorities, such as their provincial and local governments, or churches for help.

Figure 5.4B shows participants' responses as to their ability to safeguard themselves in times of vulnerability. Some 53% of the participants said they were not aware of, or prepared for, such disasters. These results were based on the participants' own judgement, based on the fact that they live with such threats daily and some of them had frequently experienced disasters in their communities. About 38% responded that they were prepared, in that they have no capacity to contain such disasters because they occur unexpectedly. About 9% of the participants did not answer this part of the question or were unsure about it. These results imply that communities are rendered vulnerable to the risks, but are largely unable to mitigate them, as summed up by one of the participants:

Although they are aware of these risks as they have had experienced in past, but the risks including market prices are beyond our controls. They would have
expected their leaders to help minimise these risks. At this stage they still live in vulnerable environment. With this situation, what they afraid of is that: They do not want to see casualties such as hunger or deaths. They hope their local authorities through the leaders improve in their responses strategies and attend to them during times of disasters' (Ward member, case study village, June 2012).

5.6.2 Vulnerabilities – East New Britain Province

The sample size for ENBP was 47 and the results are presented in Figure 5.7.

![Figure 5.7: ENBP community respondents’ assessment of (A) major risks types and (B) greatest potential risks to their communities.](image)

5.6.2.1 Types of risks

As can be seen from Figure 5.7A, on average 45% of the respondents across the three communities identified environmental/natural factors as the most common risks in their communities. Twenty six percent of the respondents identified economic or market situations as the major risk to their communities, and 21% identified social or cultural factors as major risks. Only 8% of the respondents identified political or institutional factors as major risks to their communities.

These results generally imply that there are more environmental/natural disasters in the region. According to the responses gathered in the interviews, most of these risks were related to frequent floods, volcanic ash fallout, landslides, droughts, as well as pest and human diseases outbreaks (e.g., cocoa pod borer and malaria). My personal observations walking through the community’s cocoa
garden plots confirmed that damage had been done to cocoa trees and food gardens as a result of floods. For instance, at the time of this survey, relief exercises were underway to assist the affected local communities after a large flood that destroyed parts of Manapki and Liaga communities. According to the interview responses, floods were a frequent risk to many of their gardens blocks, with ongoing effect on livelihoods.

5.6.2.2 Greatest potential risks
Figure 5.7B indicates that 51% of the respondents stated natural or environmental factors as the greatest potential risks. Twenty seven percent of the respondents identified economic or market conditions as their greatest risk. Political and social issues were each identified by 11% of the respondents as the major risks in the community. These results reflect the frequent natural disaster events and human and plant diseases. This also supports the earlier assessment in Section Figure 5.7A that environmental/natural factors are the greatest potential risks in these communities. The low potential accorded political and social risks is notable in these communities.

5.1.1.7 Risk management strategies and preparedness
As above, I also investigated how communities were prepared in terms of managing these risks. The outcomes from these assessments are presented in Figure 5.8A & B.

![Figure 5.8: Proportion of ENBP respondents identifying responses to vulnerability (A), and who felt they were prepared for times of vulnerability (B)](image-url)
As shown in Figure 5.4A, 64% of the participants responded that relatives and friends are those they turn to immediately in times of vulnerability. Another 36% of the participants turn to local authorities such as their Provincial and Local Level Governments and churches for help when that is needed in their communities.

About 57% of the participants responded that they were aware of and prepared for disasters. Many felt that their previous experience of disasters helped them to better prepare. Another 34% responded that they are not prepared for risks/disasters. As indicated by an interviewee, ‘these risks/disasters are unexpected events and are difficult to plan for’. Nine percent of the participants did not answer this part of the question or were unsure about it. When the study enquired about their greatest hopes and fear for the future; one of the participants stated that:

I hope to see my community learn from previous experiences and to be proactive and responsive to our own needs prior government’s assistance. This is based on my past experiences that local authorities particularly government’s attention to such situation have been very slow and sometimes may not provide enough relief exercises. In this process, worst thing that I fear is that people may die (Ward councillor, case study village, Apr, 2012).

5.6.3 Western Province vulnerabilities
This section discusses vulnerabilities in Western province communities. The results are presented in Figure 5.8.

5.6.3.1 Types of risks
Figure 5.8A shows the number of respondents and proportion of their responses in percentage in these surveyed communities. On average, 54% of the respondents across the three communities stated social and cultural factors as the most common risks in their communities. Another 23% of the respondents stated political instability or institutional processes as the major risk to their communities. A further 18% of the respondents stated environmental/natural hazards as the major risks, and 5% of the respondents identified economic factors as the major risks to their communities.
These results generally show that social conflicts and disputes among clans, families and tribes are frequent and important in terms of vulnerability. According to the responses gathered in the interviews, most conflicts usually emerged as a result of unequal distribution of benefits within the community. These results also support the results in Section 5.2.3 on livelihood assets and livelihood strategies (Section 5.5.3). These results are also supported by a statement from one of the participants in a meeting at Bultem village:

Over the last ten years my clan has been experiencing unfair sharing of benefits from the CMCA monies and projects. What we have seen was that those families whom their relatives are members of the VPCs, LTFs and LOA benefit more than us. We feel we are not being recognised or are missing out. We are aware that there is substantial amount of money in the CMCA funds promised by OTML and these have not been delivered equally. The reason my clan is disputing is because we want share of the benefits. (Case study village, Jun 2012)

In support of her husband, his wife said:

Prior to OTML there were no such conflicts and there was always peace and harmony among us. Because there is a lot of money and benefits coming to us from OTML, greed and self-interest have permeated into our once peaceful community. (Case study village, Jun 2012)

These statements reveal how the community of Bultem is losing its strong cultural and social cohesions and networks. Trust has eroded among community members.
5.6.3.2 Greatest potential risks

Figure 5.8B shows the risks respondents judged to have greatest potential impact. Across three communities, 42% of respondents identified social and cultural factors as the greatest potential risk. Thirty five percent identified the potential risk of environmental disasters as their greatest risk, followed by political (18%) and economic (5%) issues. These results indicate the frequent conflicts and disputes amongst clans and families are perceived to pose serious threats. This supports the earlier assessment in Figure 5.7A that social and cultural factors are the most common risks in these communities.

5.1.1.8 Risk management strategies and preparedness

Results from Figure 5.10A suggest that 62% of the participants responded that relatives and friends are the immediate ones that can help them in time of disasters. Thirty eight percent see OTML, LLGs churches and local authorities as those they would turn to first in such circumstances.

![Graph](image)

Figure 5.10: Proportion of WP respondents identifying responses to vulnerability (A), and who felt they were prepared for times of vulnerability (B)

Fifty percent of the participants (Figure 5.10B) stated that they are aware of and prepared for disasters as some of them have frequently experienced in their communities. Another 38% responded that they are not prepared in any particular way to face unexpected events, because they are unable to avoid such risks and disasters and could do little with their resources to do anything. Twelve percent of the participants did not answer this part of the question or were unsure about it.
5.6.4 Summary of vulnerabilities
Overall, the results relating to vulnerabilities indicate that those in ESP communities feel economic risks are the most significant ones they face. In contrast, ENBP communities identified natural disasters as their greatest risk, WP communities identified social conflict as the greatest risk they faced. Across all regions, the majority of respondents would expect to rely their relatives and friends in times of disasters.

5.7 Chapter conclusion
The analyses in this Chapter presented the results focused on livelihoods assets, livelihood strategies, consumption and spending behaviours and vulnerabilities. These factors varied in many respects across each of the three communities and three regions studied. For example, ESP was dominated by social and natural assets-bases in comparison to than the other two regions. In contrast, financial, physical and human assets were rated much stronger in WP than ESP or ENBP. ESP and ENBP had a more similar pattern assets than WP. However, ENBP has a more balanced distributions assets across the different asset classes.

With regard to livelihood strategies, both subsistence and cash income earning strategies were widespread throughout the three regions. However, the subsistence food production systems and associated subsistence economy remain of fundamental importance in the region yet to be impacted by development. Conversely, WP communities produce less from their gardens and depend much more on purchased supermarket foods. In ENBP, both subsistence and purchasing strategies were moderately important, due to more balanced assets bases in these communities.

Despite the scale of Ok Tedi Mining Limited (OTML) development interventions, WP communities do not accord as much emphasis to subsistence food production as in the other regions. This is due partly due to the traditional emphasis on foraging rather than gardening, and partly to the money they received from OTML as royalties and compensations allowing them to rely more on store-bought food. In contrast to the other two regions, WP has seen increased economic opportunities, reflecting the relatively greater significance of the cash economy. This was driven largely by the opportunities provided by OTML as the main source of income and influence to these communities, in contrast to the lack of such opportunities or interventions on ESP and ENBP.

In relationship to consumption and spending behaviours, it clears that there is strong relationship between the various livelihoods components assessed. For example, the consumption and spending behaviours of the communities depended on the type of assets-base each community and region have. In terms of vulnerabilities, the study noted that generally risks varied across the three regions. For
example, ESP potential risks was associated economic, while ENBP was more vulnerable to environmental risks such as floods and volcanic eruptions. The WP communities' major risks were related to social conflicts that stem from sharing of resource development benefits.

In summary, these results suggest that there are strong relationships between the four livelihoods components studied. For instance, the livelihood strategies communities pursued in order to achieve their desired outcomes depended on the type and form of assets-based found in their respective regions. Similarly, the consumption and spending behaviours also depended on assets-bases and livelihood strategies available in the region. Similarly, vulnerabilities also depended on the asset-bases and livelihood strategies, and in part on consumption and spending behaviours of the people. These relationships were evident across the three case regions that all three components rely on each other.

This chapter has provided an understanding of relationship between the livelihood assets, livelihood assets, consumption and spending behaviours, vulnerabilities and livelihood strategies as key aspects of this study. The next chapter, Chapter 6, provides insights to leadership, institutional structures and their implications in these regions.
6.1 Introduction

Following the results describing livelihoods and related issues presented in Chapter 5, this Chapter presents the results of the study relating to leadership modes, institutional structures and their implications, in response to research sub-questions 2 and 3. The first part of the chapter focuses on results relating to research question 2 and second part discusses research question 3. As for the results reported in Chapter 5, these results derive primarily from fieldwork conducted in the case study communities between June 2011 and October 2012, and are framed in terms of the contexts, background, concepts and methods described in Chapters 2-4.

The chapter is presented in 8 parts, discussing each of the definition of leadership modes in each region, leadership modes, institutional structures, leadership models, the roles of community leaders, the pathways to attaining leadership roles, decision making approaches used by the community leaders, and the implications associated with community leadership.

6.2 Leadership modes observed in the study communities

This section discusses modes of leadership observed in each of the three regions studied, in the same order of presentation as in Chapter 5. Respondents were asked to identify which of the modes of leadership described in Chapter 3.2.3 were dominant in their community.

6.2.1 East Sepik Province communities

Table 6.1 presents the proportion of respondents in each ESP case study community who believed each of these leadership modes was dominant in their community.
Table 6.1: Proportion and number (bracketed) of participants in East Sepik Province (ESP) study communities identifying dominance of particular leadership modes.

<table>
<thead>
<tr>
<th>Village 1 (n=17)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership - % (#)</td>
<td>41 (7)</td>
<td>29 (5)</td>
<td>12 (2)</td>
<td>12 (2)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Participating (trupla man) leadership % (#)</td>
<td>53 (9)</td>
<td>24 (4)</td>
<td>12 (2)</td>
<td>6 (1)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Selling (mauswara) leadership - % (#)</td>
<td>12 (2)</td>
<td>12 (2)</td>
<td>24 (4)</td>
<td>41 (7)</td>
<td>12 (2)</td>
</tr>
<tr>
<td>Delegating (cultural) leadership -% (#)</td>
<td>24 (4)</td>
<td>12 (2)</td>
<td>12 (2)</td>
<td>42 (7)</td>
<td>12 2(53)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership - % (#)</td>
</tr>
<tr>
<td>Participating (trupla man) leadership - % (#)</td>
</tr>
<tr>
<td>Selling (mauswara) leadership - % (#)</td>
</tr>
<tr>
<td>Delegating (cultural) leadership - % (#)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership - % (#)</td>
</tr>
<tr>
<td>Participating (trupla man) leadership - % (#)</td>
</tr>
<tr>
<td>Selling (mauswara) leadership - % (#)</td>
</tr>
<tr>
<td>Delegating (cultural) leadership - % (#)</td>
</tr>
</tbody>
</table>

Total number of respondents: 42

Table 6.2: Proportion of participants in East Sepik Province (ESP) study communities identifying particular leadership modes as “most dominant” or “more dominant”.

<table>
<thead>
<tr>
<th>Village 1</th>
<th>Village 2</th>
<th>Village 3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership - %</td>
<td>71</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Participating (trupla man) leadership - %</td>
<td>76</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Selling (mauswara) leadership - %</td>
<td>24</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td>Delegating (cultural) leadership - %</td>
<td>36</td>
<td>33</td>
<td>31</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, June-October 2012

Participants in Table 6.2 are the same survey population as for Table 6.1. Table 6.2 shows that respondents identified participating (trupla man) (average 76%; range 75-77%) and and influencing (biksot) leadership (74%; 71-77%) as the dominant leadership modes. Around a third of respondents identified delegating (cultural) leadership mode (33%; 31-36%) and selling (mauswara) leadership mode (29%; 24-38%) as dominant modes. These responses were quite consistent across the three communities.
6.2.2 East New Britain Province communities

Table 6.3 presents the proportion of respondents in each ENBP case study community who believed each of these leadership modes was dominant in their community.

Table 6.3: Proportion and number (bracketed) of participants in East New Britain Province (ENBP) study communities identifying dominance of particular leadership modes.

<table>
<thead>
<tr>
<th>Village 1 (n=16)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership -% (#)</td>
<td>38 (6)</td>
<td>44 (7)</td>
<td>13 (2)</td>
<td>6 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Participating (trupla man) leadership -% (#)</td>
<td>50 (8)</td>
<td>31 (5)</td>
<td>13 (2)</td>
<td>6 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Selling (mauswara) leadership -% (#)</td>
<td>25 (4)</td>
<td>44 (7)</td>
<td>13 (2)</td>
<td>13 (2)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Delegating (cultural) leadership -% (#)</td>
<td>13 (2)</td>
<td>19 (3)</td>
<td>31 (5)</td>
<td>38 (6)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=15)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership -% (#)</td>
<td>53 (8)</td>
<td>33 (5)</td>
<td>13 (2)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Participating (trupla man) leadership -% (#)</td>
<td>60 (9)</td>
<td>33 (4)</td>
<td>7 (1)</td>
<td>7 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Selling (mauswara) leadership -% (#)</td>
<td>20 (3)</td>
<td>27 (4)</td>
<td>13 (2)</td>
<td>40 (6)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delegating (cultural) leadership -% (#)</td>
<td>13 (2)</td>
<td>20 (3)</td>
<td>20 (3)</td>
<td>47 (7)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=16)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership -% (#)</td>
<td>25 (4)</td>
<td>38 (6)</td>
<td>25 (4)</td>
<td>13 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Participating (trupla man) leadership -% (#)</td>
<td>63 (10)</td>
<td>19 (3)</td>
<td>13 (2)</td>
<td>6 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Selling (mauswara) leadership -% (#)</td>
<td>38 (6)</td>
<td>31 (5)</td>
<td>13 (2)</td>
<td>19 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delegating (cultural) leadership -% (#)</td>
<td>13 (2)</td>
<td>19 (3)</td>
<td>19 (3)</td>
<td>38 (6)</td>
<td>13 (2)</td>
</tr>
</tbody>
</table>

Total number of respondents: 47;

Table 6.4: Proportion of participants in East New Britain Province (ENBP) study communities identifying particular leadership modes as “most dominant” or “more dominant”.

<table>
<thead>
<tr>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot) leadership (%)</td>
<td>81</td>
<td>87</td>
<td>63</td>
</tr>
<tr>
<td>Participating (trupla man) leadership (%)</td>
<td>81</td>
<td>87</td>
<td>81</td>
</tr>
<tr>
<td>Selling (mauswara) leadership (%)</td>
<td>69</td>
<td>47</td>
<td>69</td>
</tr>
<tr>
<td>Delegating (cultural) leadership (%)</td>
<td>31</td>
<td>33</td>
<td>31</td>
</tr>
</tbody>
</table>

Sources: Author’s Survey data, June-Oct 2012
ENBP respondents identified three modes of leadership as dominant. Participating \((trupla\ man)\) leadership was identified as a dominant mode by 83% (range 81- 87%) of respondents; influencing \((biksot)\) leadership mode as dominant by 77% (63-87%); and selling \((mauswara)\) leadership mode as dominant by an average of 62% (47-69%) percent. Around a third of respondents 32% (31-33%) identified delegating (cultural) leadership as a dominant mode.

There was more variation between the three communities in ENBP than ESP. Influencing \((biksot)\) leadership was identified by fewer respondents (63%) in the third community than the other two, and selling \((mauswara)\) leadership mode by a lower proportion (47%) in the second community. I will discuss the reasons for this in Chapter 7.

### 6.2.3 Western Province communities

Table 6.5 presents the proportion of respondents in each WP case study community who believed each of these leadership modes was dominant in their community.

<table>
<thead>
<tr>
<th>Village 1 (n=16)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing ((biksot)) leadership -% (#)</td>
<td>56 (9)</td>
<td>25 (4)</td>
<td>13 (2)</td>
<td>6 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Participating ((trupla\ man)) leadership -% (#)</td>
<td>44 (7)</td>
<td>31 (5)</td>
<td>19 (3)</td>
<td>6 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Selling ((mauswara)) leadership -% (#)</td>
<td>25 (4)</td>
<td>6 (1)</td>
<td>13 (2)</td>
<td>44 (7)</td>
<td>13 (2)</td>
</tr>
<tr>
<td>Delegating ((cultural)) leadership -% #)</td>
<td>44 (7)</td>
<td>25 (4)</td>
<td>13 (2)</td>
<td>13 (2)</td>
<td>6 (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=13)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing ((biksot)) leadership -% (#)</td>
<td>54 (7)</td>
<td>31 (4)</td>
<td>8 (1)</td>
<td>8 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Participating ((trupla\ man)) leadership -% (#)</td>
<td>46 (6)</td>
<td>23 (3)</td>
<td>15 (2)</td>
<td>15 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Selling ((mauswara)) leadership -% (#)</td>
<td>31 (4)</td>
<td>8 (1)</td>
<td>15 (2)</td>
<td>46 (6)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delegating ((cultural)) leadership -% (#)</td>
<td>46 (6)</td>
<td>31 (4)</td>
<td>15 (2)</td>
<td>0 (0)</td>
<td>8 (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=14)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing ((biksot)) leadership -% (#)</td>
<td>57 (8)</td>
<td>14 (2)</td>
<td>14 (2)</td>
<td>7 (1)</td>
<td>7 (1)</td>
</tr>
<tr>
<td>Participating ((trupla\ man)) leadership -% (#)</td>
<td>50 (7)</td>
<td>21 (3)</td>
<td>7 (1)</td>
<td>21 (3)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Selling ((mauswara)) leadership -% (#)</td>
<td>14 (2)</td>
<td>21 (3)</td>
<td>14 (2)</td>
<td>50 (7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Delegating ((cultural)) leadership -% (#)</td>
<td>43 (6)</td>
<td>14 (2)</td>
<td>7 (1)</td>
<td>29 (4)</td>
<td>7 (1)</td>
</tr>
</tbody>
</table>

Total number of respondents: 43;
Table 6.6: Proportion and number (bracketed) of participants in Western Province (WP) study communities identifying dominance of particular leadership modes

<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influencing (biksot)</td>
<td>81</td>
<td>85</td>
<td>71</td>
<td>79</td>
</tr>
<tr>
<td>Participating (trupla man)</td>
<td>75</td>
<td>69</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td>Selling (mauswara)</td>
<td>31</td>
<td>38</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>Delegating (cultural)</td>
<td>69</td>
<td>77</td>
<td>57</td>
<td>68</td>
</tr>
</tbody>
</table>

Sources: Author’s Survey data, Jun 2012

As with ESP and ENBP communities, in general WP communities are also dominated by both influencing (biksot) and participating (trupla man) leadership modes. Table 6.3 shows that, of the 43 participants interviewed, on average, 79% (range 71-85%) identified influencing (biksot) leadership as a dominant mode, and 72% (69-75%) identified participating (trupla man) leadership as a dominant mode. An average of 68% (57-77%) identified delegating (cultural) leadership as a dominant mode, and around a third 35% (31-38%) identified selling (mauswara) as a dominant leadership mode.

There were also variations between the three communities. For example, delegating mode was less commonly identified by respondents from V3. Reasons for these results will discussed in Chapter 7.

6.2.4 Summary of leadership modes

This section provides summary analysis of the leadership modes presented above, for the three case study regions. Figure 6.1 presents the average proportion of respondents in each region who believed a particular mode to be more or most-dominant.
The proportions of respondents who identified influencing and participating leadership modes as dominant were similar in all three regions, at around 80%. A much higher proportion of ENPB respondents (around 60%) than in ESP or WP identified selling (mauswara) mode as dominant, and a similar proportion in WP identified delegating (cultural) leadership mode as dominant, compared to ESP and ENBP.

Figure 6.2 presents the averages proportion of respondents in each region who believed a particular mode to be less or least-dominant. Delegating leadership mode was strongly identified as not dominant in ESP and ENBP, and selling leadership mode as not dominant in ESP and WP.
Together these results provide important insights into modes of leadership that are currently practice in the three studied regions of PNG. The results reveal both influencing (biksot) and participating (cultural) leadership modes were perceived to be the dominant leadership modes across the three regions. There was significant variation between the regions in relation to the other two modes, with selling (mauswara) leadership mode much more evident in ENBP (62%, compared to 35% in WP and 33% in ESP); and delegating (cultural) leadership mode much more evident in WP (68%, compared with 33% in ESP and 32% in ENBP). Reasons for this are discussed in Chapter 7.

6.3 Institutional structures observed in the study communities

This section presents the results concerning institutional structure and governance systems in the case study communities. I present the results as descriptive summaries illustrated by direct quotes from survey participants, focusing on ‘community institutions’ and the composition of membership of these institutions.

6.3.1 Institutional structures in ESP communities

There are three categories of institutions in this region: traditional, government, and church organisations. In total, eleven institutions exist, including the government system such as ward
committees; all of these function similarly particularly at the village level, to deliver goods and services to the communities. Table 6.7 summarises the institutions and their purpose. The leaders of these institutions are, respectively traditional clan leaders appointed by the clan members through customary processes, such as the eldest of the family automatically assuming leadership roles; government leaders are the ward members elected through formal government systems; and for the churches, pastors and priests are appointed through church processes. Leaders of development-related institutions are those appointed as community leaders through informal community meetings to represent communities in negotiation and representations between developers and governments.

Table 6.7: Community institutions and their purpose in East Sepik case study communities

<table>
<thead>
<tr>
<th>Institution type</th>
<th>Institution per community (no.)</th>
<th>Purpose</th>
<th>Source of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ugutakua Jipakim Numamaka</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Clan</td>
<td>8 8 3</td>
<td>Promote culture and traditions</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Tribe</td>
<td>1 1 1</td>
<td>Promote identity and culture</td>
<td>Group meeting</td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ward Council</td>
<td>1 1 1</td>
<td>Support government services</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Law &amp; Order Committee</td>
<td>1 1 1</td>
<td>To address law and order issues</td>
<td>Group meeting</td>
</tr>
<tr>
<td>3. Youth and Sports</td>
<td>1 1 1</td>
<td>Develop youth skills</td>
<td>Group meeting</td>
</tr>
<tr>
<td>4. Others</td>
<td>1 1 2</td>
<td>Address issues</td>
<td>Group meeting</td>
</tr>
<tr>
<td>Church</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Roman Catholic</td>
<td>1 1 1</td>
<td>Promote Christianity</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Assemblies of God</td>
<td>1 1 1</td>
<td>Promote Christianity</td>
<td>Group meeting</td>
</tr>
<tr>
<td>3. Others</td>
<td>3 3 2</td>
<td>Promote Christianity</td>
<td>Group meeting</td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Land Owner Associations</td>
<td>1 1 0</td>
<td>Promote local business</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Corporative Societies</td>
<td>1 1 1</td>
<td>Generate income opportunities</td>
<td>Group meeting</td>
</tr>
</tbody>
</table>

Source: Author's Survey data, Ugutakua, Jipakim and Numamaka communities (June, 2012)

6.3.1.1 Traditional institutions

Clan group lineages are common traditional institutions throughout the region. Because of its remoteness, there are limited influences from modern practices, so traditional institutions typically operate in well-structured and-organised forms. These institutions are based on traditional moiety arrangements that give prominence to every clan’s values and norms in the community. Almost all participants responded that they consider their clans as their source of existence and the foundations
from where good leadership attributes evolve. It is through clans that people assume their unique identities amongst their communities. This uniqueness is typified by their api (symbolic birds or totem). The underlying principle is that an api (or totem) also moieties is a secret institution that regulates, rules and provides guidelines for its members. The behaviours of an api, as observed in the forest, are generally held to resemble the behaviours and attitudes of individuals in a particular clan group. For example, one of the participants explained that:

This community is comprised of number of clans. The clans are named after symbolic birds and animals that have significant value in their existence. For example, those people who talk a lot are from the Wama (cockatoo) clan and those that make noise are from Ura (green parrot) clan. Those of us from Waura (the night owl) we disseminate information and news to communities. We also provide advice and predict certain events in the communities. There are also other from Kuaru (red parrot) and Pal (hornbill) clans, they are quite conservative and listeners (Author’s Survey data, Numamaka village, June 2012).

This statement illustrates how people in these communities are still strongly and deeply immersed in ways of living governed by traditional institutions and practices.

6.3.1.2 Governments

As in many rural parts of PNG, communities in this region see ward councils, village courts and peace order committees as the main government institutions. Although all three communities studied host these government institutions, there is a general agreement amongst the communities that many government services are profoundly lacking in the region. The lack of government services is reflected in the poor and deteriorating condition of the roads, health centres and school infrastructure, as described in Chapter 4. My personal observations, and those of other studies (e.g., Bourke and Harwood, 2009; Hanson et al., 2001), confirm that there is little access to major administrative centres such as Maprik or Wewak. There was little evidence of ward members, LLG presidents or provincial staff in the districts. The LLG presidents were operating without an established office. This illustrates disconnect of information flow and service delivery between the national and provincial governments and the people, through their LLG presidents and ward members. Although the role of these institutions is to improve the community’s livelihoods through delivery of national government services at the local level, in practice these have been lacking.
6.3.1.3 Church groups

The study results also demonstrate that churches play an integral role in these communities. About 88 percent of participants interviewed were followers of the Catholic Church, while the remaining 12 percent were from other churches, such as Seventh Day Adventist (SDA) and South Sea Evangelical Churches. As with other communities in PNG, churches play a central role in the physical and spiritual development of the people in this area. Belonging to a church or religious group is regarded as the basis for developing good leadership attributes in the community. In this sense, the same leaders who are practicing as churches leaders can also assume other leadership roles in other institutions. As commented by one of the participants:

Church groups, particularly the Roman Catholic over the last eight years, have been involved in advocating leadership training programs. They advocate good governance and leadership as part of their Christian outreach programs. Apart from that advocacy program, the church has been the major provider of health and education in their community’ (Ward member, Numamaka village, June 2012).

6.3.2 Institutional structures in ENBP communities

The institutions that exist in the ENBP case study communities are as for ESP, with the addition of new resource development institutions (NRDI). These institutions are presented in Table 6.8, which shows that eighteen institutions exist in the study communities. Three of these institutions are traditional, seven are governmental, six are church-based, and two represent NRDI. The traditional, government and church institutions were established in the region prior to the Kairak Oil Palm Development Project (KOPDP); one of the forms of NRDI, the Land Owner Associations (LOA) emerged as a result of KOPDP, but is found only in Liaga. The LOA was created by the communities of Liaga in order to participate in the development processes of the KOPDP. It is also a requirement of the company (KOPDP) that such a LOA has to be established to facilitate the distribution of development benefits from the project. Each of these institutions is discussed in the following sections.
Table 6.8: Community institutions and their purpose in East New Britain case study communities.

<table>
<thead>
<tr>
<th>Institution type</th>
<th>Institution per community (no.)</th>
<th>Purpose</th>
<th>Source of information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Liaga</td>
<td>Manapki</td>
<td>Nabata</td>
</tr>
<tr>
<td>1. Clan</td>
<td>3</td>
<td>Mixed groups</td>
<td>1</td>
</tr>
<tr>
<td>2. Tribe</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3. Tubuan Association</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ward council</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2. Village Court</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3. Community Governments</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4. Health Committee</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Mataugan Association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Youths and Sports</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>7. Local Govt. Council (LLG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Churches</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Roman Catholic</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. Uniting Church</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3. Seventh Day Adventist</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4. Youths Fellowship Groups</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5. Mens’ Fellowship Groups</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6. Women’s groups</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>New Resource Development Institution (NRDI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Land Owner Association</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Others (e.g. Business groups)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, Liaga, Manapki and Nabata communities (April, 2012)
6.3.2.1 Traditional institutions

The main traditional institutions are the tribal and clan groups. These institutions are part of the indigenous tribal and clan networks that have existed for thousands of years - well before the government, churches and NRDI institutions. The significance of these institutions is that the strength of their customs, norms and beliefs, which unite the community during both good and bad times. Liaga, for example, comprised three sub-clans, namely Sukparmatka, Avir and Kopki within the Kairak tribe. These clans support the welfare and general daily activities of their members, and the leaders of these institutions are clan elders. These clans are major owners of the land in which the project is located. Although other clans exist in the community, they are not directly impacted by this project. While it was easy to identify traditional institutions in Liaga, it challenging to identify clans in the other two communities. For Manapki community, it would be impossible for them to live in clans, as most of them are migrants from other regions in the country and are scattered throughout the community. However, a surprising case was observed in Nabata, where participants found it difficult to describe clan groups. None of the participants interviewed, except one, could relate clearly with a clan group. Instead, most participants made reference to maternal pedigrees particularly focusing on kadia aumana ngalangala/patuana (female ancestors) to whom they were related. One possible explanation for this is that many participants were too shy to speak in-depth about their relationship with each other, as it may have implications for them. This explanation was also supported by statement from one of the female participants that I talked to separately after the interview. The following is her explanation:

My people particularly the participants in this survey could not clearly understand and relate to clan because we slept over such information. Along the way generations never actually passed on this information to our young ones. However, I believe that this interview has imposed a task that our people will trace our ancestors and to know our clan names better. To this day my mother has not told me the clan she belongs. All my mother tells me is, the people I am related to, and all my distant relatives and where my ancestors originated and how they came to be in this place/Nabata. I also feel missed out on clan information, struggling to understand and fell obliged to help the community explore more. This survey has alarmed my community to identify, explore more and know our clan institutions (Participant, Nabata village, April 2012).

The statement above implies that clans do exist in this community. However, people require further explanation from those like herself and other elites to educate them to understand their relationships amongst themselves and the nearby communities. Based on my knowledge of other ENBP
communities, including other studies such as those of Tammisto (2008) and Liu (2010), clans are evident in these communities.

In summary, for the case study communities, Liaga has traditional clan institutions; there is some evidence of them in Nabata; but no evidence of traditional institutions in Manapki. In the last case, this is because the residents are *wairas* (settlers) migrated into the area from other parts of PNG. This created difficulties for them to form incorporated land groups (ILGs), as ILGs are normally based on traditional clans.

### 6.3.2.2 Government institutions

According to Polye (2014), ENBPG (2009) and experts such as experienced PNG researcher Michael Bourke, (pers. comm. Jun, 2013), the Province of East New Britain is regarded as a model in PNG, in terms of a better managed economy, government services, and well-established government institutions such as Local Level Governments (LLGs) and tertiary institutions. The provision of basic government services from each of the national, provincial, district and ward levels was evident in these communities, with the exception of some roads, which were deteriorating in places.

The presence of government institutions was also reflected in type of services being provided in these communities. For example, the study communities were generally well-connected by road to major administrative centres such as Rabaul, Keverat and Kokopo. Most ward members, Local Level Government (LLG) presidents and provincial government staff were generally observed to be present in their respective districts. LLG presidents have established administrative offices within their districts and ward members were seen conducting business in these offices. This indicates that government systems were active in these communities. It could also mean that communities here are more aware of the importance of government services, and more willing to participate in development programs initiated by the government.

### 6.3.2.3 Church groups

The study communities in this region have well-established churches and associated social groups. Most respondents identified churches as the most common institutions. The two dominant churches in this region are the Catholic and Uniting Churches; other smaller Pentecostal churches and a Seventh-Day Adventist church are also present. Apart from their spiritual roles, churches also contribute to the development of communities, provinces and the general livelihoods of these people. For example, churches provided most of early school and health services. As an interviewee pointed out, what are
now government institutions such as the Kabaleo Teachers’ College, Vuvu High School, or the Naparpar Health Centre near Kerevat, were all established and formerly run by the churches.

6.3.2.4 New resource development institutions
The predominant new resource development institutions in the region are the three Land Owner Associations (LOA) found in Liaga. These associations are comprised of the formally incorporated clan groups (ILGs), the Sukparmatka, Avir and Kopki ILGs, under the umbrella company KOPDP. These associations (ILGs) were formed by the communities to participate in the Kairak Oil Palm Development Project (KOPDP). The LOA structure consists of 6-8 executive members. They include Chairman (sometimes called president), vice chairman, secretary, treasurer, women representative, youth representative, church representative and other including ward members and elite members of the community. Under these ILGs, executive members of each group plan out activities that are important to their clan members. The executives organize meeting with their clan members and collectively present their views to the company management. Each of these ILGs carry out similar tasks of representing their clan’s views to the company, but specific to their own needs and priorities.

Apart from the NRDI, there are other institutions such as business groups that individual families and clans establish to venture into capitalizing on the opportunities provided by the project. For example, a family may establish a public motor vehicle (PMV) business group, trade stores, or fuel stations.

6.3.3 Institutional structures in WP communities
This section discusses social institutions and structures and the purposes of these in these institutions in Western Province. As with ENBP institutions, institutions here are classified into four categories. These are traditional, government, church groups and new resource development institutions. Table 6.1 shows composition of current institutions and purposes of their establishment.
Table 6.9: Community institutions and their purpose in Western Province case study communities

<table>
<thead>
<tr>
<th>Institution type</th>
<th>Institution per community (no.)</th>
<th>Purpose</th>
<th>Source of information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Clan</td>
<td>3 3 6</td>
<td>Promote cultural values</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Tribe</td>
<td>1 1 1</td>
<td>Promote cultural values</td>
<td>Group meeting</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ward council</td>
<td>1 1 1</td>
<td>To promote government services at village level</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Law and order committees</td>
<td>1 1 1</td>
<td>Promote peace and harmony</td>
<td>Group meeting</td>
</tr>
<tr>
<td>3. Local Level Council (LLG)</td>
<td>1 1 1</td>
<td>Develop government services at district level</td>
<td>Group meeting</td>
</tr>
<tr>
<td>4. Others (e.g., Health Committee)</td>
<td>2 2 2</td>
<td>Address community issues</td>
<td>Group meeting</td>
</tr>
<tr>
<td><strong>Churches</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Roman Catholic</td>
<td>1 1 0</td>
<td>Promote Christianity</td>
<td>Group meeting</td>
</tr>
<tr>
<td>2. Seventh-Day Adventist</td>
<td>0 0 1</td>
<td>Promote Christianity</td>
<td>Group meeting</td>
</tr>
<tr>
<td>3. Others (Pentecostal groups)</td>
<td>1 1 2</td>
<td>Promote Peace &amp; Christianity</td>
<td>Group meeting</td>
</tr>
<tr>
<td><strong>New Resource Development Institutions (NRDI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Village Planning Committees (VPC)</td>
<td>1 1 1</td>
<td>Deliver community projects</td>
<td>Group meeting/OTML</td>
</tr>
<tr>
<td>2. Local Trust Foundations LTF</td>
<td>1 1 1</td>
<td>Manage community funds</td>
<td>Group meeting/OTML</td>
</tr>
<tr>
<td>3. Land Owner Associations (LOA)</td>
<td>1 1 1</td>
<td>Address landowner issues</td>
<td>Group meeting/OTML</td>
</tr>
<tr>
<td>4. Large Investment Firms (LIF)</td>
<td>3 3 2</td>
<td>Promote local Businesses</td>
<td>Group meeting/OTML</td>
</tr>
<tr>
<td>5. Small to Medium Business Groups (SMBG)</td>
<td>7 6 4</td>
<td>Promote clan businesses</td>
<td>Group meeting/OTML</td>
</tr>
<tr>
<td>6. Women and Children's Associations (WCA)</td>
<td>1 1 1</td>
<td>Promote women &amp; children's agenda</td>
<td>Group meeting/OTML</td>
</tr>
<tr>
<td>7. Youth &amp; Sports Groups (YSG)</td>
<td>3 3 3</td>
<td>Develop youth skills</td>
<td>Group meeting/OTML</td>
</tr>
</tbody>
</table>

Source: Author's Survey data, Bultem, Atemkit and Bige communities (July 2011 and June 2012); OTML, (2011)

The traditional, government and church institutions predated the development intervention from Ok Tedi Mining Limited (OTML) in the early 1980s. However, because of the remoteness of Western
Province, these institutions have typically been operating with minimal supervision and support in terms of finance, infrastructure and human resource capacities from the national and provincial government levels.

The Ok Tedi mining development has significantly influenced the number of institutions, by fostering the establishment of a suite of new resource development institutions. As evident from Table 6.9, there are many more NDRI in this case study region, 7, compared to two traditional, four government, and three church institutions. As discussed in Chapter 4, in this case study region, Village Planning Committees (VPC) and Local Trust Foundations (LTF) are the key institutions that work in conjunction with OTML to deliver community projects. VPCs are village-based institutions that oversee the management and implementation of projects approved by their LTF in the villages.

Normally, the VPC structure comprises eight to nine executive committee members: the Chairman, Vice Chairman, Secretary, Treasurer, two women representatives, one youth and one church representatives, and a Ward member of the village. The LTF comprises eight members: two or three local trustees/directors, two representatives from PNG government agencies, a Provincial Government representative, a Church representative, and a women’s representative.

Other NRDI in this case study region are the Land Owner Associations, (LOA), Local Investment Firm (LIF), Small to Medium Business Groups (SMBG), Womens and Children Groups (WCG), and Youth and Sports Groups (YSGs). They also have similar executive membership compositions to the VPC and LTF. For example, the structure of a LOA in the villages of Bultem, Atemkit and Bige comprise the following executive memberships – Chairman, Secretary, Treasurer, one women’s representative, one youth representative, one clan representative, one OTML representative, and one Ward member.

As noted above (Table 6.9), there are four types of local level institutions relevant to this study: the traditional, government, church, and new resource development institutions. Each of these is discussed in the following sections.

### 6.3.3.1 Traditional institutions

Traditional institutions relate to family, clan and tribal groups, which were the only institutions that existed in this region prior to colonisation. There are nine different clans represented in the study communities. Three clans - Kimka; Fikalain; and Kinumsengayun - are found in both Bultem and Atemkit villages, and six in Bige - Meripen Bige, Hyma Poinamnai, Hyma Hunai, Hore Bige, Amroe Bige, and Amroe Rankya. These traditional institutions remain the mainstay of society, and are still important for welfare and general livelihoods of the communities.
In community decision-making processes, each of these clans is represented by their clan elders in meetings that discuss how land and resources are accessed and used and protected, as well as other issues that affect their communities. Clan leaders are also the leaders who represent their community in the government and new resource development institutions. For example, the Bultem Ward Member is the clan leader of Kimka. Similarly, most of the nine clans have clan heads as representatives in Village Planning Committees (VPC), Local Trust Foundations (LTF) and Land Owner Associations (LOA).

6.3.3.2 Government institutions
Modern government institutions - Village Ward Councils, Law and Order Committees and Health Committees - exist in these communities to deliver government-supported services. Although such government institutions exist, they do not have the capacity to sustain their effective operations. For instance, there have been deteriorating health and education services in the communities studied (Hanson et al 2001; Bourke and Harwood 2009). In one of the case communities, a health centre and a school observed have ceased operations due to lack of government support. Village magistrates and ward members have shown less interests in their roles as, according to two of the leaders interviewed, they were not being paid. In most cases, OTML has been supporting these formal institutions to achieve their goals and objectives through development funds and institutional structures delivered through the Community Mine Continuation Agreement (CMCA) processes.

6.3.3.3 Church groups
Churches are another important group that exist alongside traditional and government institutions. Churches are also important partners in development in these communities. The main denominations are Roman Catholic, Assemblies of God (AOG) and Seventh Day Adventist (SDA), and some other smaller Pentecostal churches. They play important roles in these communities, not only in terms of meeting their spiritual needs, but helping to build peace and harmony, guided by social justice principles.

6.3.3.4 New resource development institutions
In this region, new resource development institutions (NRDI) refers to Village Planning committees (VPC), Local Trust Foundations (LTF), Land Owner Associations (LOA) and all local business groups. All of these institutions are associated with the Community Mine Continuation Agreement (CMCA) processes implemented by OTML. Some of these institutions were established in 1984 when
OTML commenced its operation, while others were as a result of CMCA. As stated by one of the VPC chairmen:

‘most of the institutions in our communities were established after the OTML, particularly the during the CMCA implementation period between 2001 and 2011’. (Author’s Survey data, Atemkit village, 21 July 2011).

Another participant stated that:

‘when the CMCA process was not in place, we only got direct cash from OTML, and now with CMCA we have more community groups that can participate in accessing benefits from the company.’ (Author’s Survey data, Atemkit village, 21 July 2011).

The statements above illustrate how the establishment of NDRI under the CMCA have enabled communities to access benefits in forms that they had not been able to previously, and which complement the roles of traditional and government institutions.

6.3.4 Summary of institutional structures across case study regions

As evident in the results presented above, institutional structures, and the composition of executive membership and their roles, varied across the three case study regions. The major differences were:

- there was a higher number of new resource development institutions (NRDI) in WP, directly consequent to OTML development interventions, and particularly since the conclusion of the CMCA. The CMCA catalysed the formation of institutions to enable communities to participate in development programs;
- there was a relatively high number of government institutions in ENB. The seven government institutions found in ENBP are a result of the long history of agricultural developments, and the prudent management of government services, in this part of the region (O’Neill 2014). Over time, the presence and role of these government institutions have been integrated with those expected from traditional norms and beliefs;
- ENBP also had a greater number of churches and related activities than WP and ESP. Similarly to the point above, the long history of the presence of churches in the region, and lengthy history of agricultural development, allowed the communities to integrate the concepts and structures promoted by the churches with their existing values and cultures.
This observation is similar to those made by, amongst others, Epstein (1968), Simet (1991), Neumann (1992) and Martin (2013) that ENBP communities have progressively transformed into a modern society, more so than the rest of PNG;

- The low development status of ESP was reflected in the absence of development institutions in the region, and the predominance of traditional institutions.

6.4 Types of leadership models in the case study regions

This section presents results on the type of leadership models in the case study regions. Three leadership models are relevant in this study: customary, modern and hybrid. The ‘customary’ model is based on local peoples' indigenous social structure, values, norms and beliefs. The ‘modern’ model is the formal governance model based on the modern government structure, which the country adopted after becoming independent in 1975. ‘Hybrid’ leadership is an emerging model that combines both the existing traditional and modern leadership concepts.

At first, it was difficult to establish how best to categorise the churches. However, with the communities’ consent, churches were classified as a form of hybrid leadership. This decision was based on the understanding that churches were introduced institutions, but also acknowledges as much as possible the traditional values important to the congregation.

6.4.1 Leadership models evident in East Sepik Province study communities

Table 6.10 presents the results for leadership models for ESP communities.
Table 6.10: Proportion and number (bracketed) of participants in East Sepik Province (ESP) study communities identifying dominance of particular leadership models

<table>
<thead>
<tr>
<th>Village 1 (n=17)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Least dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary -% (#)</td>
<td>82 (14)</td>
<td>12 (2)</td>
<td>6 (1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Modern -% (#)</td>
<td>24 (4)</td>
<td>6 (1)</td>
<td>12 (2)</td>
<td>17 (3)</td>
<td>41 (7)</td>
</tr>
<tr>
<td>Hybrid - % (#)</td>
<td>6 (1)</td>
<td>0 (0)</td>
<td>17 (3)</td>
<td>12 (2)</td>
<td>65 (11)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary -% (#)</td>
</tr>
<tr>
<td>Modern -% (#)</td>
</tr>
<tr>
<td>Hybrid - % (#)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary -% (#)</td>
</tr>
<tr>
<td>Modern -% (#)</td>
</tr>
<tr>
<td>Hybrid - % (#)</td>
</tr>
</tbody>
</table>

Total number of respondents: 42

Table 6.11: Proportion and number (bracketed) of participants in East Sepik Province (ESP) study communities identifying particular leadership models as more- or most-dominant.

<table>
<thead>
<tr>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary (%)</td>
<td>82</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Modern (%)</td>
<td>24</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Hybrid (%)</td>
<td>6</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, case communities (July 2011 and June 2012)

Of the 42 participants interviewed on average, 78% (range 75- 82%) reported that customary leadership was a dominant model. The next most dominant leadership model reported was the modern (19%; 8- 256%); only 7% (0-15%) identified hybrid leadership as a dominant model.

These results suggest that ESP study region is dominated by customary leadership model. This is consistent with my earlier conclusion presented in Chapter 5 (Section 5.3.1), that the Wosera-Abelam and Kwasingua’s leadership modes are based on their traditions and customs, and implies that the
expression of modern and hybrid leadership models is limited in this region. This is to be expected because there is very little outside influence in terms of development.

6.4.2 East New Britain leadership models

Table 6.12 presents the results for leadership models for ENBP communities.

Table 6.12: Proportion and number (bracketed) of participants in East New Britain Province (ENBP) study communities identifying dominance of particular leadership models

<table>
<thead>
<tr>
<th>Village 1 (n=16)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary - % (#)</td>
<td>25 (4)</td>
<td>6 (1)</td>
<td>38 (6)</td>
<td>25 (4)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Modern - % (#)</td>
<td>25 (4)</td>
<td>19 (3)</td>
<td>38 (6)</td>
<td>12 (2)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Hybrid - % (#)</td>
<td>13 (2)</td>
<td>6 (1)</td>
<td>31 (5)</td>
<td>37 (6)</td>
<td>13 (2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=15)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary - % (#)</td>
<td>13 (2)</td>
<td>7 (1)</td>
<td>33 (5)</td>
<td>27 (4)</td>
<td>20 (3)</td>
</tr>
<tr>
<td>Modern - % (#)</td>
<td>13 (2)</td>
<td>7 (1)</td>
<td>47 (7)</td>
<td>20 (3)</td>
<td>13 (2)</td>
</tr>
<tr>
<td>Hybrid - % (#)</td>
<td>20 (3)</td>
<td>13 (2)</td>
<td>33 (5)</td>
<td>27 (4)</td>
<td>7 (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=16)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary - % (#)</td>
<td>25 (4)</td>
<td>6 (1)</td>
<td>50 (8)</td>
<td>13 (2)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Modern - % (#)</td>
<td>19 (3)</td>
<td>12 (2)</td>
<td>44 (7)</td>
<td>19 (3)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Hybrid - % (#)</td>
<td>19 (3)</td>
<td>12 (2)</td>
<td>38 (6)</td>
<td>19 (3)</td>
<td>12 (2)</td>
</tr>
</tbody>
</table>

Total number of respondents: 47

Table 6.13: Proportion and number (bracketed) of participants in East New Britain Province (ENBP) study communities identifying particular leadership models as more- or most- dominant.

<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary (%)</td>
<td>25</td>
<td>13</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>Modern (%)</td>
<td>15</td>
<td>13</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>Hybrid (%)</td>
<td>13</td>
<td>20</td>
<td>19</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Author’s Survey data, case communities (July 2011 and June 2012)
Of the 42 participants interviewed, 21% (range 13-25%) reported that customary leadership model was dominant in their community; 17% (13-20%) identified a hybrid leadership as dominant; 16% (13-19%) identified a modern leadership as dominant. There were also differences between the three communities, with modern approaches more commonly considered dominant in the first community and much less so in the second community. Results suggest that whilst people in this region are accustomed to their customary and traditional leadership practices, they are also adapting to modern modes of leadership concepts in their communities, and – to some extent at least - integrating them into their existing traditional systems.

### 6.4.3 Western Province leadership models

Table 6.14 presents the results for leadership models for WP communities.

<table>
<thead>
<tr>
<th>Village 1 (n=16)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary -% (#)</td>
<td>19 (3)</td>
<td>6 (1)</td>
<td>13 (2)</td>
<td>25 (4)</td>
<td>37 (6)</td>
</tr>
<tr>
<td>Modern -% (#)</td>
<td>25 (4)</td>
<td>37 (6)</td>
<td>6 (1)</td>
<td>13 (2)</td>
<td>19 (3)</td>
</tr>
<tr>
<td>Hybrid -% (#)</td>
<td>25 (4)</td>
<td>13 (2)</td>
<td>25 (4)</td>
<td>19 (3)</td>
<td>31 (5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 2 (n=13)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary -% (#)</td>
<td>15 (2)</td>
<td>8 (1)</td>
<td>23 (3)</td>
<td>39 (5)</td>
<td>15 (2)</td>
</tr>
<tr>
<td>Modern -% (#)</td>
<td>46 (6)</td>
<td>15 (2)</td>
<td>23 (3)</td>
<td>8 (1)</td>
<td>8 (1)</td>
</tr>
<tr>
<td>Hybrid -% (#)</td>
<td>23 (3)</td>
<td>8 (1)</td>
<td>23 (3)</td>
<td>31 (4)</td>
<td>15 (2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Village 3 (n=14)</th>
<th>Most dominant</th>
<th>Dominant</th>
<th>Neither</th>
<th>Less dominant</th>
<th>Least dominant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary -% (#)</td>
<td>14 (2)</td>
<td>29 (4)</td>
<td>14 (2)</td>
<td>14 (2)</td>
<td>29 (4)</td>
</tr>
<tr>
<td>Modern -% (#)</td>
<td>29 (4)</td>
<td>14 (2)</td>
<td>29 (4)</td>
<td>21 (3)</td>
<td>7 (1)</td>
</tr>
<tr>
<td>Hybrid -% (#)</td>
<td>29 (4)</td>
<td>21 (3)</td>
<td>14 (2)</td>
<td>36 (5)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Total number of respondents: 43

Source: Author’s Survey data, case communities (July 2011 and June 2012)
Table 6.15: Proportion and number of participants in Western Province (WP) study communities identifying particular leadership models as more- or most- dominant.

<table>
<thead>
<tr>
<th>Model</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customary (%)</td>
<td>19</td>
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<td>14</td>
<td>16</td>
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<tr>
<td>Modern (%)</td>
<td>25</td>
<td>46</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Hybrid (%)</td>
<td>25</td>
<td>23</td>
<td>29</td>
<td>26</td>
</tr>
</tbody>
</table>

Of the 43 respondents assessed, 33% (range 25-46%) responded that a modern leadership model was the most dominant; 26% (23-29%) identified the hybrid leadership model as dominant; and 16% (14-19%) identified a customary leadership model as dominant.

6.4.4 Summary of leadership models

This section presents a summary of responses about leadership models across the three study regions. Figure 6.3 presents the average proportion of respondents in each region who believed a particular model to be more or most- dominant.
The most striking difference between the regions is the very high proportion (c. 80%) of respondents in ESP who identified customary leadership as dominant, compared to the proportions (c. 20%) in ENBP and WP. Modern leadership was identified as dominant by a higher proportion (c. 40%) in WP than elsewhere. This was because ESP communities are predominantly dominated by their customs and traditions due to outside influences, while the other two regions are exposed to modern influences due to resource development projects.

Results presented in Figure 6.4 demonstrate that hybrid forms of leadership are perceived as absent in ESP, and modern forms much less dominant than in the other regions. Customary leadership is perceived to be much less dominant in WP than the other regions.

6.5 Leadership roles in the case study regions

As noted in Chapter 2.2, the literature suggests that there are some common features of leadership roles and responsibilities observed in many community leaders in PNG, and elsewhere (Filer and Sekhran 1998; Regan 1999; Imbun 2013; Yadav 2013). In this literature, three important roles are identified relevant to this study. These are representation (representing community views), negotiation (negotiating benefits and resolving conflicts), and distribution (delivering development benefits to communities). This section describes the various roles performed by the community leaders in the case study regions.
In the PNG context, representative duties require attending both internal and external meetings and making decisions on the community’s behalf. In such representation duties, resource-owning communities (often called landowners) believe that their leaders are expected to possess a number of qualities and characteristics. These qualities or characteristics are ‘spokesperson’, ‘an authentic person’ and ‘an educated person’.

A ‘spokesperson’ is a member of the community who acts as a representative in a decision-making process. A spokesperson is not necessarily regarded as a decision maker, but they help by suggesting ideas that are representative of his/her clan’s views in the initial decision-making process. This role is usually performed by customary elders or nominees of their clan. Resource developers and different levels of government identify ‘spokespersons’ as initial points of contact to gain access and establish dialogue between the communities and other stakeholders. Respondents interviewed in the study viewed a ‘spokesperson’ as an entry point into rational decision-making discussion. For example, as quoted from one of the respondents;

Elders in our communities are initial points of contact when dealing with resource use and development in the community. However, they are only liaising agents rather than decision makers between us and other stakeholders; they lack appropriate negotiation skills and leadership concepts (Author’s survey, case community, 26 July, 2011).

An ‘authentic person’ is someone who is a true member of a clan who is able to make decisions on their clan’s behalf. This means the person should have all leadership attributes required to assume the role of community leader. However, such leaders may also have self-interest in the negotiation processes. In PNG resource development communities, the authentic persons or leaders are perceived to often promote his/her personal motives. In such situation, the person/leader is thought to have had predetermined motives prior to assuming the authentic leadership role. As quoted from one of the respondents:

Many of the people (leaders) that you rely on have their underlying motives, particularly to help themselves, prior to assuming the roles of leadership (Author’s surveys, Bige community, 26 July 2011).

This statement is typical of the view that authentic persons cannot be trusted. Interview respondents described experiences that have shown that authentic persons have benefited themselves under the guise of representing the whole clan.

An ‘educated member’ is a person/leader who has attained higher educational qualifications. Communities’ expectations of this leadership role is based on modern concepts of leadership. It is
widely perceived in rural PNG communities that educated members of the community, who have historical and customary connections with the community, usually perform better in leadership roles (K. Mulung, Nalish Sam, per.comm., April 2011). However, whilst educated leaders often use modern concepts, they may pay only limited attention to the customary aspects of decision-making processes. The ‘educated member’ role is similar to the hybrid model of leadership discussed in Section 6.4, but it differs in the sense that it pays little attention to traditional leadership processes. For example, one respondent commented:

We have their own educated people there but they seemed to ignore our own customs and make decisions for their own interests. Although, the community trust them as members of our community they pay little attention to our customary ways of making decisions (Author’s survey data, Bultem community, July 2011).

6.5.1 Representative roles - East Sepik Province communities

In the development context, representation refers to the ESP communities’ participation in development processes of Nungwaia –Sengo Integrated Agroforestry Development Project. In this project area, clan leaders and chairmen of Landowner companies, such as the Mapsera Development Corporation (the region’s umbrella company) or the Ugutakua Development Association, attend developer and government sponsored meetings and make decisions for their communities. In these roles, representatives in this region are also categorised as a spokesperson (where they are not a true landowner), authentic (true landowner) or an educated members of the community. In the case of ESP, as the proposed development has not yet started, there is little experience of the ways in which community leaders discharge these representational roles.

6.5.2 Greatest potential risks

The second leadership task involves negotiations at the community level between various clan and tribal groups. In the development context, this is done particularly to reach consensus about particular projects. At the same time, community leaders are involved in negotiations between the government and developer, to understand and agree the benefits that are expected from the resource development. My study revealed that leaders in this case study region are interested in benefits that are associated with the proposed Nungwaia-Sengo Integrated Agroforestry Development Project. Respondents advised that representatives have attended two formal meetings and four informal meetings with government and developer representatives. One of the participating Ward Members reported:

I have so far attended two informal meetings and there was nothing promising for me to say this development would commence as expected. There are many issues
that need to be resolved between the communities or landowners and their leaders. At the same time their leaders including myself have not talked or (negotiated) with developer/government as what is there for us as community (Author’s Survey data, case study village, June 2012)

This statement illustrates that communities are still unclear about the nature and extent of benefits that would come from the agroforestry project. It was evident from my survey that there is a lack of collaboration between leaders of the various clans and tribes, and that their communities are poorly informed about the development status of the project. This may be in part because there are as yet no benefits to communities from the proposed project to motivate leaders’ interests.

For this reason, I do not discuss the distributional role of ESP leaders.

6.5.3 Representative roles – East New Britain Province communities

In ENBP, leaders were usually observed to be authentic leaders, who were true indigenous members of their clans and thus were mandated by their members to make decisions. These leaders therefore made direct decisions for their communities. The fewer social conflicts between the clans observed in ENBP suggest that these authentic leaders are making decisions with the understanding that their clansmen will agree with them. It also suggests that members of the community will have due respect for the leaders that as their customary elders.

Because of this, the roles of spokesperson and educated members were less evident in this study region, although it was hard to determine the influences of educated members of these communities on traditional leaders.

6.5.4 Negotiation roles – East New Britain Province communities

In ENBP, leaders were focused on traditional dispute resolution, mediation over land issues, and arbitration between different clans in the community. This was clearly the cases for leaders in the Nabata and Manapki communities, where there are no tangible development benefits to be distributed or disputed. While it was evident that the Liaga community leaders had been engaged in negotiation and distribution roles associated with royalty payments to their community, these roles did not feature strongly in my interviews. It was difficult to ascertain the scale of benefits, in terms of monetary and other development benefits, that have been delivered to the communities.
6.5.5 Representative duties – Western Province communities

The first role of community leaders in Western Province is ‘representing’ community views regarding the development processes. In the meetings I observed, educated members of communities dominated the discussions and making-decision processes. In the current socio-cultural context, communities look upon their educated members as effective and capable people to provide leadership and direction needed for the community members. It is also a cultural norm that educated members have to be respected and treated as leaders as they have attained intelligence not held by others in the community. These factors all contribute to the ‘educated member role’ predominating and overshadowing the roles of ‘spokesperson’ and ‘authentic persons’ in the WP case study communities. According to prominent WP leaders (per. comm., Steven Wembut, David Kayenkim, Richard Zumoi, Pita Borok, June 2012), the predominance of the educated member leadership style in WP is driven by circumstances and opportunities attached with resource development initiatives.

At this stage, it is difficult to comment on whether educated member leadership will deliver the outcomes and expectations anticipated by their communities, which include bringing stability and prosperity to their communities. However, the communities still have mixed views about this form of leadership in the representational context (Steven Wembut, David Kayenkim, Richard Zumoi, Pita Borok, pers. comm., June 2012). Ultimately, communities’ views depend on how they assess the qualities and characters of individuals who assume the leadership role in the community. In addition to these ‘external’ representative roles, there are also ‘internal’ roles that require leaders to represent their family and clan members within and between clans and families in their community. These are discussed under ‘negotiation roles’ below.

6.5.6 Negotiation roles – Western Province communities

The second role of leaders in Western province is to be involved in negotiation processes, that is, the deliberation of issues that are of community concern, such as solving disputes and conflicts in the communities. As with representation duties discussed above, negotiations occur similarly; internally and externally. Internal negotiation relates to resolving conflicts within and between clans and individuals and establishing sound understandings for benefit sharing among the community members. External negotiation involves community participation in important decisions relating to the development, including benefit sharing agreements in their communities. Negotiations occur internally and externally, and in both arenas, leaders seek to establish common grounds or achieve win-win solutions for the parties in dispute. Their most important goal in external negotiations is to have the community’s interests accommodated by other major stakeholders such as the government or the developer.
An example of an external negotiation in which these communities participated is the 2006/2007 consultation process leading to benefit packages offered in exchange for the mine being able to continue. An OTML officer reported that negotiations began with consultation through meetings held in each of mine-affected villages. Each village selected representatives to represent them in the negotiations. The negotiation process involved OTML and the government asking landowners to suggest initiatives for sustainable development beyond the life of the mine. The outcomes from the negotiation included a mix of benefit packages and acknowledgement that communities need to be prepared to provide for themselves and their families well beyond the mine's economic life (OTML 2009). Ultimately, the outcomes of these negotiations were reflected in the CMCA.

6.5.7 Distribution roles for Western Province leaders

The third role of leadership in a development-impacted is that of distribution. In this context, distribution refers to delivery of development benefits to communities. In the case of the Ok Tedi project, there are two major ways in which benefits are distributed: cash payments, and development projects and programs. The disbursement of cash payments and development projects are facilitated by the community leaders working collaboratively with the OTML project officers. The community leaders ensure that benefits that communities receive are used for the intended purposes. Community leaders assist OMTL officers by reporting issues relating to the distributions of benefits to communities.

6.5.7.1 Case benefits

Cash benefits refer to the cash component of the benefits package paid either to clan groups or to individuals as royalties and compensation payments. Money is directly paid to the beneficiaries at the scheduled times, as described earlier in Section 5.4.3.2 (Table 5.8).

6.5.7.2 Projects and programs

As noted in Chapter 4.3.3, the delivery of development projects and programs to communities by OTML is a separate arrangement to the cash component of compensation. These benefits contribute to community development through sustainable development infrastructure projects such as health centres, schools, houses, roads, airstrips, water supply and communications systems. Apart from distribution and sustainable projects and programs, delivery also includes providing skill development training in the areas of education, health and business development. The training programs are
designed primarily to enhance the life skills of the local communities, and particular consideration is
given to the development of women and young people (OTML 2009).

6.5.8 Summary of leadership across the case study regions
Of the three leadership roles described in this section, ‘spokesperson leadership’ as reported by
participants is typically a traditional approach that has only minimal impact on decision-making
processes. In contrast, ‘authentic leadership’ was found to have a significant impact on community
decision-making processes, because an authentic leader is usually a legitimate landowner in the
community. However, as the level of development impact increased, being an ‘educated member’
became increasingly influential in community decision making. If one is more highly educated,
community members have trust and confidence in that person, albeit with some scepticism about their
capacity to respect traditional decision processes. Nevertheless, belief in the value of education
overshadows the contributions from a spokesperson and an authentic person. This perception was
consistent across the three regions, and emphasizes the importance of education, as I discuss in later
chapters.

6.6 Pathway to leadership in the tree regions
In this section, I describe how leadership positions are attained in each of the three case study regions.
There are two key pathways that emerged as important in this context, those of the processes of the
appointment of leaders and of community meetings. These are discussed in the following sections, for
each case study region.

6.6.1 Pathways to leadership roles in ESP communities
This section describes the processes involved in attaining leadership positions and the roles of leaders
in ESP communities.

6.6.1.1 Criteria and appointment processes
The criteria use for appointing leaders in the ESP case study region are consistent across the three
communities surveyed. Most participants agreed that leaders are appointed based on their attributes as
traditional leaders. Traditional attributes included a wealth of knowledge about land and genealogical
histories, good hunting skills, public oratorial skills, being a ceremonial initiator, and being the best
yam producer. Usually, the clan elders of the community make recommendations and choose
candidates for leadership positions. In contrast, modern leaders are appointed based on modern
principles including their ability to communicate and to network, and whether they are formally educated to an adequate level. These leaders are evident in the community as Ward members and other community-based government positions. In the next section, I discuss the processes involved in appointing leaders.

Formal and informal appointment processes are evident in East Sepik Province communities. Ward members are elected through a secret ballot, while traditional leaders are appointed by show of hands in open public meetings, as discussed in Section 6.7.1.

**Who the leaders are in these communities?**

Consistent with the typical situation for PNG described in Chapter 4.2.1 to 4.3.1, leaders found here were usually the traditional clan leaders, village ward members (councillors), and a number of educated elites whom people referred to as *saveman* (individuals who have attained highest educational qualifications). Clan elders are customarily recognised and appointed leaders within communities. The ward members are the formally elected leaders under the Local Level Government (LLG) system, and can be thought of as modern leaders. While churches leaders exist in these communities, communities see them as ‘intermediate’ leaders, in that they provide advocacy and guidance only.

### 6.6.1.2 Community meeting processes

The second pathway to leadership positions in ESP communities is through being involved in community meetings. This section describes how meetings are conducted, who initiates and facilitates meetings, and when and why meetings are held. The following sections discuss these processes.

**Who initiates and calls community meetings?**

As the study region is dominated by traditional tribes and clans, initial agendas for community meetings are usually the responsibilities of traditional leaders (clan elders). Individual or clan agendas are brought to the community meetings by clan leaders. The clan leaders normally work closely together with the ward members of these communities. These processes are typical across PNG communities.

**When, where and why is the meeting held?**

All but one of the respondents interviewed responded that evenings are the most appropriate time for conducting community meetings. They stated that this timing was better because it is when all households are present after their normal daytime activities. Only one respondent considered mornings to be an appropriate for them because they thought it would be the time where their minds
were fresh to discuss new ideas to make good decisions. Respondents commented that appropriate meeting places were in open places where it is easy for every one see and join in. Most of these areas were designated common areas. These areas include *amei* (open place) and *korambu* (men’s house). The results showed that communities conduct most of their meetings in the evenings and these meetings are conducted in public places.

**Who are the participants in these meetings?**

As discussed in Chapter 5.2, the majority of respondents to my survey were men, with women and youth represented to a lesser extent. This discussion deliberately omits the issue of inclusion and exclusion in the decision-making process. This is because it was culturally inappropriate to use the terms ‘land-users’ and ‘land-owners’ in public meetings, as most participants see themselves as landowners and use of these terms may provoke disagreements between community members. However, in private, some participants stated that there were occasions on which land-users in the community were excluded from decisions made by land-owners. As the flow of benefits from the proposed project have not yet been realized, it was not yet clear how decisions about their distribution would be made in practice in these communities.

The impression I gathered during the survey was that, if there were to be benefits to be distributed, landowners would be the ones deciding on how much the land user would receive. My private conversation with the ward member of one of the communities, and the elders at this community, also confirmed that primary landowners would be the main beneficiaries. This is consistent with the findings of other studies (such as Kalinoe 2008; Kwa 1994) that, both customarily and legally, indigenous landowners are recognised as prime beneficiaries of the natural resource projects in Papua New Guinea.

### 6.6.2 Pathways to leadership roles in ENBP communities

This section examines the processes involved in attaining leadership positions and the roles of the leaders in ENBP communities. It discusses the criteria and processes involved in appointing a leader and how this leader performs his/her duties.

#### 6.6.2.1 Leadership criteria and appointment processes

According to interview responses, the three key considerations that are important for assuming leadership roles are ability and skills of a leader, qualifications, and the appointment process.
Leadership criteria

Leadership criteria across the three communities encompassed both traditional and modern forms of leadership. In Liaga, for example, the traditional process, in which the seniors and clan elders of the community make recommendations and choose individuals for leadership positions, prevails. In the traditional context, the attributes that elders of the clans use for making recommendations include: being a hard worker; being able to openly share personal wealth with others; ownership rights to land; ability to solve conflicts; good public oratory skills; and being knowledgeable about the historical and genealogical links of the community and region required to represent. In contrast to traditional qualification criteria, the criteria for ‘modern’ leaders involve attributes such as the ability to communicate well and be able to network with outside world. In this case, someone must be educated at least at secondary or higher qualification level. These criteria were used for appointing Ward members in Liaga. Similar criteria were used Manapki and Nabata, viz. that one must be educated to highest qualification level. In maintaining this claim, one participant from the case communities commented that:

Being educated means you are able communicate effectively, present well and speak confidently with the outside world. Thus, it is critical that highly educated people must assume the leadership roles. (Author’s survey data, case community, April, 2012).

The appointment process that reflect these criteria are described in the next section.

Appointment achievement processes

Similar leadership appointment processes to those observed in other case study regions, involving both formal and informal processes, were also practiced in East New Britain Province. However, within these two systems, the appointment process of a leader differed in some significant ways, reflecting the patrilineal, matrilineal and ethnically-mixed case study communities in ENBP.

For a patriarchal society, in this case Liaga, a male is eligible for traditional leadership roles. In contrast, in the matrilineal society of Nabata, female elders are the customary leaders. In the ethnically-mixed Manapki community, people favoured the modern leadership appointment processes. This reflected the view presented above by one of the respondents, that people must have courage and confidence to speak for his/her people. The underlying expectation here is that leaders must be well educated and be aware of the outside world to be effective in helping to develop their community. This community adapted the modern concept based on their situation, of being a mixed group of people from various ethnic groups and so without a common traditional culture.
Who are the leaders in these communities?

Most leaders in Liaga were the traditional clan elders or village ward councilors, as well as few educated members to whom people referred to as ‘bigmen’. Clan elders are customarily recognised and appointed leaders, and were predominantly found within the Baining society, including in Liaga. Ward members are the formally elected leaders under the Local Level Government (LLG) system. Ward members are usually the clan heads; but in the absence of eligible clan elders, younger educated family members within the communities are selected. For Manapki, ward committee members were their preferred leaders, for the reasons discussed above, and explained by one respondent:

They rely more on ward members, regardless of where he or she comes from, they represent this community based on community’s expectations. This is a diverse community and hardly that they would go with their own culture (Author’s survey data, Manapki, Apr, 2012).

Other leaders include church pastors, elders and a few educated members from their communities.

In Nabata, people see their lualua (elders), uviana (wise-wealthy men/women) and ngala (bigmen) as their traditional leaders. They also value the services of their ward members and church pastors, priests and elite members of the community. One participant stated that:

Both lualuas and ward members are equally important leaders to their society. Although, they differ in many ways including appointment and qualifications processes, they have same objectives that is to serve the same community (Pers. comm. local church pastor, Nabata, April 2012).

In summary, three types of leaders exist in these communities: traditional lualuas (clan elders), modern leaders (ward councillors), and others such as church leaders.

6.6.2.2 Roles of leaders in community meetings

This section describes the roles of community leaders in initiating meetings. It describes how leaders organise meetings, with the particular focus on who is involved in initiating meetings, when, where and why meetings should be held, and who should be the decision makers. It seeks to understand the overall community dynamics and processes that interact within the role of a leader in his/her decision making process.
Who initiates and calls for community meetings?
Participants from the two indigenous communities of Liaga and Nabata explained that: ‘the initial agendas for community meetings are suggested by clan members through their clan leaders who then collaborate with ward members to call formal community meetings to discuss an agenda’. Responses from Manapki communities indicate that individuals, particularly the household heads, suggest agendas and work with the ward member to convene a community meeting to discuss an agenda. In both cases, there are processes and protocols followed to initiate and conduct meetings. This further implies that individuals are aware of where and to whom to present their case for community discussions. In these initial meetings, important leaders in these three communities are ward members and clan members, including lualuas. These results illustrate how both traditional and modern leadership models, institutions and processes are integral to community leadership processes in PNG.

When, where and why is the meeting held?
Some 85% of the respondents interviewed in these ENBP communities nominated evenings as their most preferred time for convening community meetings. They commented that this timing was better because it is when all householders could be present after their normal activities. The other 15% of respondents considered mornings to be an appropriate for them because they thought it would be the times where their minds will fresh to discuss new ideas to make good for decisions. Appropriate meeting places for convening meetings were identified as those in open areas, visible for every one see and attend. Most of these areas were common designated places. These areas include community halls and parks. Results suggest that most of meetings are held in evenings and communities are also aware where meeting should take place.

Who should be the decisions makers?
The issue of who is and who is not part of the decision-making process was also examined here, because only some members of the communities - especially the Liaga people - are indigenous landowners of the project (KOPDP) development area. Responses from the Liaga community indicate that landowners, through their clan leaders (usually men), are the preferred decisions makers. Manapki respondents see their ward members as their decision makers, while in Nababat, people saw their mothers (elders) as the decision makers. There was a general perspective that it was important to involve both landowners and land users – in this case, the Manapki are seem as wairas (settlers), and Liaga and Nabata as landowners. Respondents from all three communities stated that, regardless of whether people are landowners or land users, they all have equal rights to make decisions. This is illustrated by a comment from a participant from Liaga:

There are no big issues between us (the ‘Bainings’) and the Wairas (settlers) as land-users. They have been with us for more than three to four generations and we
feel they are part of us. This means they also understand and respect our cultures and they should have equal rights as the landowners to make decisions for us all. However, when it comes to sensitive issues such as ownership of land, water and customary items in the community, the decisions lie with us the ingenuous members of Baining (Author’s Survey data, Liaga, April 2012).

However, when there is dispute over ownership of land between two indigenous landowners, clan leaders of disputing clans and other clans would intervene to resolve the problem. In a situation where land users quarrel amongst themselves, then the landowners of the land in dispute would settle the issue. It is clear that land owners and land users have equal rights in decision making processes, except for decisions relating to sensitive issues such as land ownership, or disputes and acquisitions made by the indigenous members of the communities. Although dwellers of these communities may have equal rights to make decisions, and people’s views varied in many respects, participants reported that most of the decisions were influenced and made by their leaders, and were not necessarily representative of views of the whole community.

6.6.3 Pathways to leadership roles in WP communities

This section describes how leaders are appointed to leadership roles in Western Province - the qualifications and criteria used for appointing leaders, the appointment process, who the leaders are, and their roles.

6.6.3.1 Leadership qualifications and attributes

The WP case study communities’ criteria for assuming leadership roles are based on their perception of the leadership attributes that an individual possess in the communities. As discussed in Chapter 2 (Section 2.2.3), communities view a leader as someone who can provide for others, a hard worker who is ready and willing to provide assistance to the needy, and a person who has material wealth (i.e., gardens and pigs). These communities also wish to have an educated member, who has the ability to network with the outside world, representing them in the decision-making process. Being a pasinman (someone who has ability to provide and feel for others), Christian, honest and respectful, educated and with links to the outside world, were also identified as attributes preferred in a leader. While recognising these criteria, the participants argued that they would want to see appropriate processes involved in appointing their leaders. What was also evident from their responses is that regardless of whether you are a landowner or not, anyone could assume the leadership roles; however,
Acknowledgements are made to the traditional landowners of the area in which the project is developed (Kalinoe 2008; Kwa 1994).

**Appointment processes**

According to the interview responses, there are two main appointment processes for leadership roles in these study communities: traditional (informal) and government (formal) processes. In a formal process, leaders are elected by secret ballot. This method is used for electing ward councillors or members; and as a modern government process, it is well documented and conducted within prescribed rules and guidelines. In the traditional (informal) process, leaders are also elected but in public community gatherings and meetings. It is considered informal because people cast their votes by show of hands. Unlike a formal process, the informal appointment process is not documented in the modern sense. Usually, a nominee who receives the highest number of votes through a show of hands from community members is recognised as the winner. The informal processes are mostly used in the appointment of executive members of sports, women groups, landowners associations and business groups discussed in Section 6.3.3.

The appointment of Village Planning Committees (VPCs) and Local Trust Foundations directors/trustees are made by OTML’s appointment committees in consultation with the CMCA guidelines and deeds. The ward members are formally elected through secret ballot which is the government formal process. However, the Incorporated Land Groups (ILGs) executive positions are usually appointed through both formal/informal community gatherings where, in some cases, meeting minutes are recorded in formal documents.

**Who are the usual community leaders?**

In the WP case study communities, most respondents stated that the usual order of communities’ preferences for leaders are VPCs, ward councillors, and their clan elders. Village Planning Committees are the OTML-supported village-based decision making body for delivering mine-related benefits to the communities. The Ward councillors are formally elected leaders under the LLG system in the community. The elders are traditionally appointed leaders; every clan in these communities has an elder. These leaders have been engaged in performing their current and active roles in their communities. Apart from these leaders, church pastors, priests and elite members of the community are also considered to be leaders in the community. The commonalities observed between is group of leaders are that they are all – at least in principle - serving the same communities with similar goals and motives, i.e., to oversee the improvement of their community’s livelihoods and wellbeing.
Despite their common goals, differences exist amongst leaders. For example, respondents reported that the customary leaders are known to make decisions without proper consultation, and with apparent self-interest as the driving force. Interview responses reveal that these leaders often pay little attention to community development interests and are more concerned with cash-driven development activities. They act like spokespersons, but appear to lack the skills and understanding for effective decision making in a modern society and economy. This is consistent with the statement of one of the participants presented in Section 6.3.3.2.2 about the clash between older and younger generation leaders. Responses from other participants indicate that some of the VPCs and ward councillors tend to embody more of the conventional leadership styles that advocate sustainable development principles. They claim to be pro-development and are outspoken leaders in this emerging economic environment, but it is also evident that in some cases the outcome of their actions is to benefit themselves or their immediate relatives. Examples described for Bultem VPC discussed below (see Section 6.3.3.2) exemplify this.

Most respondents stated that the leaders most active in their current roles are the Village Planning Committees (VPCs). From the responses, it seems the VPCs are active because they are being motivated by the development incentives provided by OTML. Their conscientiousness in attending to community grievances regarding benefit distributions also encourages people to see VPCs as their preferred leaders. VPCs are the decision-making bodies responsible for choosing how community funds and benefits derived from the mine are used at the community level, and so have access to the resources required to perform duties in the current socio-economic environment, which the clan leaders and ward councillors do not. Nevertheless, there is also disparity in the quality of goods and services being delivered by VPCs, especially regarding the benefits derived from the mine.

6.6.3.2 Community meeting processes in WP

Community meetings provide another pathway to leadership. This section describes how meetings are convened, with particular attention on who initiates meetings, and when and why meetings are held in the communities.

Who initiates and calls community meetings?

According to respondents, community meetings are usually initiated and called by two groups of leaders, Village Planning Committees (VPCs) and village ward members. The ward members are responsible for organising general community meetings, mostly relating to issues of community affairs. The VPCs are specific bodies that deal with agendas relating to the CMCA development processes. Whilst both these groups of leaders are community-based and focused on looking after the
welfare of their communities, respondents reported that VPCs are a more proactive and persuasive group of leaders compared to village ward members, conducting up to six meetings more than ward members per year. One of the reasons for this is because VPCs are supported by OTML, and have the financial capacity to conduct meetings. This is consistent with my personal observations as a participant in a VPC meeting, where participants were served with food and drinks. VPC members also receive meeting allowances. In contrast, ward members get little assistance from their local government council (LLG) to organise such community gatherings. Consequently, it is not surprising that VPC has more influence, resources and persuasive power that allows them to initiate and conduct more meetings than ward members.

**When, where and why meetings should be held?**

About 90% of the respondents considered evenings as the most appropriate timing for convening community meetings. They commented this timing was better because it is when all householders can be present after their normal activities. However, a minority of the respondents considered mornings to be an appropriate time for them because they thought mornings are time where their minds are fresh to discuss new ideas and to make good decisions.

At the community level, common places for conducting meetings were in open areas because everyone can see and attend. Most of these areas were marked and accessible to all members of the communities. These areas include community halls and parks. However, there are cases where very important decisions are made outside of the usual venues in the communities. According to respondents, these external venues include hotels, guest houses and motels in other major centres in PNG. Although, the venues sounded external to the communities, but the decisions made here are village-based brought into a different environment. Thus, the communities are dissatisfied with such arrangements and they reported that they are quite happy with the meetings being conducted in their villages. However, people become suspicions and uncertain when meetings are held outside of their own village; when this happens, people feel that they are being excluded from major decision processes.

**Who is included and excluded in decision-making processes?**

The issue of inclusion and exclusion in decision-making processes was also examined, because – as is the case throughout PNG – the distinction between landowners and land-users is critical in resource use decisions. There are both landowners and land-users in these communities. Thus, as in other case study regions, I asked questions about who makes important decisions and what level of discussions and consideration are given to both landowners and land users during the meetings. It was evident
from responses that the onus is on land owners to make important decisions; but land-users also participate in the processes, and not just as observers. Depending on the nature of the relationships whether the land-user is adopted or is related through inter-marriages and kinship relations, including the time spent and history of his/her relationship with the landowners, they can have equal rights to contribute to discussion and decisions. As stated by one of the landowner respondents;

I have no problem with outsiders making decisions for the community, as long as they (outsiders) have been part of this society without bad reputations and show respect for this community’s culture and lifestyle. Otherwise, important decisions lie with the community and other legitimate owners of land resources (Author’s Survey data, Bultem Village, June 2011).

The impression given at most of the group meetings and interviews with leaders I conducted was that all community members (including men, women and youth) participate in decision-making processes through a consensus approach. However, this contrasted with individually expressed views. In individual interview responses, all except three (out of 43) respondents said that they did not participate in the decision-making processes in the community. The impressions I gathered from group meetings and leaders were based on the practice that, in PNG customary societies, only leaders were allowed to speak on their members’ behalf, while others listen (Holzknecht, 1996; Barker and Ietjen, 1990). Furthermore, women and younger people show respect to their leaders, or they are shy to speak in public meetings. The contrasting views expressed especially by women, young and elders came about through successive one-on-one discussions in which individuals progressively felt at ease to speak clearly about their opinions. They expressed clearly that they do not actively take part in decision processes because they expected their leaders, including elite members and customary leaders, to make decisions for them. However, one of the participants said;

This has not always been the case, what we have observed so far is that our educated elite members and customary leaders do not call us together in meetings for making community decisions. At the same time, they do not consult each other and do not work as a team in the community (Authors’ Survey data, Atemkit village, July 2011).

Many respondents responded by saying in principle the elite and customary leaders agreed to work together, but there is no concrete evidence of them working together. One participant commented that:

Although she contributes to the decision processes, what comes out as result was not what she expected. For example, they passed a resolution in a meeting to build a community hall for a women’s resource centre, however their menfolk went ahead and bought themselves a new fifth-element Toyota Hilux car. This meant
that their (women’s) request was not entertained and the decision only favours one group of leaders (men) (Author’s Survey data, Bige Community, July 2011).

The above two statements suggest that, while community meetings about new projects are inclusive, ultimately the leaders dominate and make final decisions. This means also that leaders can shape the decisions to benefit themselves or their relatives from these projects. The statement by the second respondent above illustrates how community-oriented proposals can be individualized by a few individuals, especially the community leaders. Respondents reported that this has been common practice across these three communities. For example, assets such as vehicle, outboard motors and community resource centres are given to communities under the terms of the CMCA communities; the community leaders, particularly the VPC Chairmen, become custodians of these properties. However, in the process of this custodianship the leaders claim these properties as their own, which diminishes the purpose of community ownership.

On this basis, it is apparent that leaders and community members’ views are sometimes inconsistent. Many of the important decisions are made by the leaders, and community members typically have very little opportunity to contribute in terms of decision-making. However, there are also some cases where communities were listened to and their needs were met by the leaders. Many such cases as expressed by respondents in the household interviews were related mainly to irregular and trivial matters, such as purchasing sewing-machines for women’s groups and purchasing uniforms for sports teams. Communities believed that segregation between the customary and modern leadership systems cannot deliver the desired developments in their communities. Therefore, an appropriate integration of both decision systems is required, and could enable communities to participate more meaningfully in the development process. They believed that it is because the two modes of leadership are working separately that they are not effective in delivering desired projects to the community.

6.6.4 Summary of pathways to leadership roles

Generally, the three case study regions shared similar approaches to the appointment of leaders. Firstly, individuals must possess some qualities that people associate with leaders, either traditional or modern. Secondly, individuals vying for leadership roles have to submit to processes involving either or both traditional and modern rules and guidelines. The three case study regions represent a spectrum. In the case of ESP, traditional and customary processes were dominant, and modern processes played little role. In ENBP, the communities emphasized modern processes and leaders, in terms of government systems and churches. The WP communities’ leadership appointment processes were also based on modern concepts, but reflected those promoted by the developer (OTML); this
was also the case, to a lesser extent, in the Liaga community in ENBP. In these cases, all leadership appointments had to conform to some form of strict guidelines promoted the developers.

6.7 The decision-making approaches in the three regions

My research also investigated how decisions are made by their community leaders, particularly in community meetings. Three main approaches emerged from this part of the research. These are the ‘api-kundi’ (totem lineage) approaches found in ESP communities, the ‘laen-varkurai’ (special community meeting) approach in ENBP, and the Wanbel istap (CMCA Way) in WP communities. Each of these approaches is described in the following sections.

6.7.1 Api-kundi approach

In ESP, as with other aspects of leadership, it was evident that customs and traditions play the most significant role in decision-making choices. Two approaches namely, api kinship and kundi (lineage language groups) were the decision styles most practiced in the communities studied. Both decision styles are characterised by number of features connected to various symbolic totems, and are also associated with languages and dialects spoken within the region. Api kinship is a clan-based approach, while kundi lineage is an approach practiced community-wide, and is the more-favoured decision style.

Other decision styles such du-kundi (discussion restricted only to men), takua-kundi (meeting restricted to womenfolk), and akui-kundi (group talk) were also observed here but were less commonly practiced in the region. Du-kundi is male-dominated decision style that exclude women and children, although leaders do seek opinions from the women and children. An example of this was observed in the yam festival and other ritual ceremonies where women and children were not part of the decision making process. Takua-kundi is the women and youth decision-making style, particularly on matters of concern at the household level. An example of this occurs in a family’s garden: for example, where to make a garden, what to plant and who will be involved. Akui-kundi is a group decision style in which men, women and youth all participate and contribute to as part of the decision making process. For example, in akui-kundi people gather together to talk about how NSIADP will impact on their lives. I asked respondents to identify which decision-making style was dominant in their community; the results are reported in Table 6.16.
Table 6.16: Proportion and number (bracketed) of participants identifying the main decision-making styles in their community in East Sepik Province (ESP) case study communities.

<table>
<thead>
<tr>
<th></th>
<th>Api-kinship</th>
<th>Kundi-lineage</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village 1 - % (#)</td>
<td>29 (5)</td>
<td>65 (11)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Village 2 - % (#)</td>
<td>25 (3)</td>
<td>75 (9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Village 3 - % (#)</td>
<td>15 (2)</td>
<td>77 (10)</td>
<td>8 (1)</td>
</tr>
<tr>
<td>Ave. (%)</td>
<td>23</td>
<td>72</td>
<td>5</td>
</tr>
</tbody>
</table>

Total number of respondents: 42
Village 1 (n = 17), Village 2 (n =12, and Village 3 (n =13)

Source: Author’s Survey data, case communities (Jul 2011 and Jun 2012)

Of the 42 respondents, 72% identified the kundi-lineage approach as the main decision-making style in their community. Twenty three percent identified the api kinship decision-making style; only 5% identified other style as dominant.

6.7.2 Laen-barniuruna approach

In ENBP, my results suggest that there are three common decision-making styles adopted by leaders. The first is through the village laen (general community meeting). A laen is a regular event that occurs on a monthly basis. Various individual clans and families present their situations and share their views and experience about how they live and interact with each other. In this process, the leaders take on a facilitation role and allow community members to discuss issues openly and make decisions themselves. The second style is the barniuruna (relatives) decision style. In barniuruma, relatives (including men in a matrilineal community in which they are not allowed to make decisions) are seemingly allowed to make decisions for the community. The third decision style is through what the community called Mande kivung, a term that refers to meeting organised by the ward council in the community. Here, the community gather together on a specific day allocated by the council. Usually, Monday is specified by the ward council for weekly community works. Before or after community works, if there are decisions to be made, people convene a meeting to make decisions. Table 6.17 presents responses from participants about the main decision making styles in their communities.
Table 6.17: Proportion and number (bracketed) of participants identifying the main decision-making styles in their community in East New Britain Province (ENBP) case study communities

<table>
<thead>
<tr>
<th></th>
<th>Baniuruna</th>
<th>Laen</th>
<th>Mande Kivung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village 1 - % (#)</td>
<td>38 (6)</td>
<td>56 (9)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Village 2 - % (#)</td>
<td>47 (7)</td>
<td>47 (7)</td>
<td>7 (1)</td>
</tr>
<tr>
<td>Village 3 - % (#)</td>
<td>25 (4)</td>
<td>75 (12)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Ave. (%)</td>
<td>37</td>
<td>59</td>
<td>4</td>
</tr>
</tbody>
</table>

Total number of respondents: 47; Village 1 (n = 16), Village 2 (n = 15), and Village 3 (n = 16)

Source: Author’s Survey data, case study communities (Jul 2011 and Jun 2012)

Of the 47 respondents interviewed, 59% responded that the *laen* was the main decision-making style; 37% identified *baniuruna*; and only 4% identified *Mande kivung* as the dominant decision style.

### 6.7.3 Wanbel istap approach

In WP, results suggest that *wanbel istap* (the CMCA way) was the main decision making style found in the case study communities. *Wanbel istap* is an approach used in the CMCA regions of OTML for negotiation and delivery of benefits to communities. The phrase *wanbel istap* [in PNG ‘Tok Pisin’] means “general consensus between the disputing parties”. The context in this case is that both parties, OTML and the mine-impacted communities, agreed in principle for the operation of the mine to continue while they negotiate to find better solutions that are beneficial to both parties. This was described as a new way forward for decision making for the people impacted by the mine, and as an improvement from the previous process.

Under *wanbel istap*, three practices that appeared common throughout these communities were (1) the VPC process, (2) goodwill approaches, and (3) non-CMCA approaches. The VPC process follows the prescriptions described in the CMCA project implementation cycle. It begins with project nomination, appraisal, Trust approval, implementation, monitoring/evaluation and finally completion. This is a formal process requiring lengthy discussions and deliberations by VPC chairmen and LTF board of directors. The goodwill approach is a term used by OTML to describe a form of direct assistance provided by OTML in cash or kind to communities. This does not require such a formal process. In this latter case, it is clear that communities do have their own decision process, and then draw on the OTML process to make decisions. Non-CMCA approaches refers to decisions made without
involvement of CMCA processes (e.g., government systems). Table 6.18 shows the main decision styles that were evident in these case study communities.

**Table 6.18: Proportion and number (bracketed) of participants identifying the main decision-making styles in their community in Western Province (WP) case study communities**

<table>
<thead>
<tr>
<th>Community</th>
<th>VPC (%)</th>
<th>Goodwill (%)</th>
<th>Non-CMCA (Others)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village 1</td>
<td>81 (13)</td>
<td>13 (2)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Village 2</td>
<td>69 (9)</td>
<td>23 (3)</td>
<td>8 (1)</td>
</tr>
<tr>
<td>Village 3</td>
<td>64 (9)</td>
<td>36 (5)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Ave. (%)</td>
<td>71</td>
<td>24</td>
<td>5</td>
</tr>
</tbody>
</table>

Total number of respondents: 43
Village 1 (n = 16), Village 2 (n = 13), and Village 3 (n = 14)

Source: Author’s Survey data, case communities (Jul 2011 and Jun 2012)

Of the 43 respondents, 71% identified VPC as the main decision style; 24% identified Goodwill; and only 5% identified others (non-CMCA) decision making styles as dominant. These results suggest that communities here are strongly influenced by the CMCA processes promoted by the OTML.

**6.8 Implications of leadership modes in the context of development**

This section describes the implications that the leadership modes and attributes presented above for communities in the context of development interventions. This aims to answer the third subsidiary research question of this study, viz. *What were the implications for local and other level institutions and actors seeking to facilitate development?* The implications are viewed from both communities’ and leaders’ perspectives. Communities’ views were assessed from participants’ responses about how they view and describe their leaders’ leadership behaviours. To assess leaders’ views, I asked participants who were leaders in communities to respond from that perspective; and those who were not in leadership roles to respond as if they were. The discussion here does not consider ESP communities, as they have not yet experienced development interventions. Figure 6.5 provides an overview of the main characteristics of the implications reported in the two study regions.
Communities' views of leadership behaviour

The data from Figure 6.5 reveals that unequal sharing of benefits was perceived as the most common behaviour of leadership with implications for development (34% ENBP, 30% WP). Compromising the community’s interest for self-gains was the next most common behaviour perceived in WP (47%), whereas leaders acting as agents for protests and disputes was next most common in ENBP (28%). Weak leadership was perceived as an issue by 19% on ENBP, but only by 14% in WP.

Leaders' views of communities' behaviour

Equal proportions of respondents (34%) in ENBP and WP believed that, from the perspective of their leaders, resolving disputes and confrontations were the most dominant issues in these communities. Some 28% of respondents in ENBP identified both lack of respect and cooperation and non-consensus decisions as an important issue; the proportion identifying lack of respect and cooperation was similar with 24% in WP, but the proportion identifying non-consensus decisions as an issue was lower in WP.
(16%). Around the (26%) respondents in WP identified social fragmentation and disunity as an issue with communities.

Together, these results suggest that perceptions of the implications from communities’ and leaders’ perspectives varied to some extent across the two regions. This depended on the type of development benefits distributed in their respective regions. In some senses, both communities and their leaders appear to be blaming each other for what may have transpired as a consequence of the nature of leadership in the communities.

**6.9 Chapter summary**

This Chapter has presented the results of my research about the various dimensions of leadership in the case study communities. They show that both influencing (*biksot*) leadership and participating (*trupla man*) leadership modes are common in the three regions, although expressed to different degrees. The other two leadership modes - selling (*mauswara*) and delegating (*customary*) leadership - had relatively little influence over communities’ decision making approaches. There are many reasons of dominance and weakness of the four leadership modes, and I discuss these further in the next Chapter.

There were both similarities and differences in institutional arrangement and structures across the three regions. The number of institutions generally reflected the extent and nature of development in that area. Greater levels of development intervention also favoured more modern styles of leadership. All three regions shared similar approaches for appointing community leaders, based on the attributes community members saw as desirable for leaders. However, those desired leadership attributes were also influenced by the extent and nature of development, as were appointment processes to leadership roles and responsibilities. Less developed or impacted areas had a greater reliance on traditional processes.

The same pattern was evident in results relating decision-making styles; WP communities were dominated by introduced concepts, while those in the other two regions continued to use decision-making approaches supported by the traditional and government systems. In the communities where there were development benefits to be distributed, both community members and community leaders appear to be blaming each other for what may have transpired as a consequence of the nature of leadership in the communities. I discuss these issues further in the next Chapter.
Chapter 7: Relationships between livelihoods, community leadership and natural resource development outcomes across the three case study regions

7.1 Introduction

This chapter presents my response to the second of the subsidiary research questions posed in Chapter 1, viz: what are the effects of livelihood assets, strategies, and outcomes, and of institutional structures and leadership modes evident in the case study communities, on the development outcomes of stability and prosperity? It builds on the results presented in Chapters 5 and 6 in relation to livelihood assets, strategies, and outcomes, and to institutional structures and leadership modes and styles.

It explores what factors appear to have influenced the prosperity and stability of, and the leadership modes observed in, the case study communities. The exploration draws on the conceptual frameworks discussed in Chapter 2, viz. the social ecological systems framework (Ostrom 2009), sustainable livelihood frameworks (DFID 1999); the hybrid models of leadership (Hersey et al. 1996; Martin 2013; Joseph 2015); and the integrated conceptual framework developed for this study from these frameworks and models, and presented in Figure 3.2.

These frameworks represent the categories of factors that interact in communities involved in resource-based development contexts. Those that I considered important are the livelihood components (i.e; assets, strategies, vulnerabilities), the development outcomes, (i.e, prosperity and stabilities), consumption and spending behaviours, and the community leadership approaches (modes, institutional structures and models) and the relationships and tasks linked to leadership.

As discussed in Chapters 1.1 and 2.4.1, I identified community-level prosperity and stability as the two central outcomes sought by communities from development. I therefore begin this discussion by focusing on what I have learnt from my study about the effects of natural resource developments in the case study communities on community prosperity and stability.
7.2 *Effects of resource development on community stability and prosperity*

This section discusses the results of my research in response to research question 2, viz. the effects of resource development on community prosperity and stability. The discussion explores how and why the predominant form of natural resource development in each region has influenced the prosperity and stability of development-affected communities. Figure 7.1 provides an overview of the study findings in these terms, and illustrates the clear differences between the case study areas.

![Figure 7.1: Summary of development outcomes in terms of stability and prosperity of case study communities](image)

7.2.1 *East Sepik Province communities*

As illustrated in Figure 7.1, the communities in ESP region lack prosperity in terms of financial, physical and human assets. This is because the region is isolated and has very limited access to roads, transport, markets, health, education and communication services benefits that typically come with natural resource development in PNG. This is manifested in the low average weekly household income of only PGK168 (Table 5.6). However, the communities demonstrate a high level of stability in social and natural resources. There has been no ‘modern’ resource-based development as yet, and little outside influence, so communities remain dominated by traditional practices. This strong focus on traditional practices also means communities are more focused on promoting and maintaining...
social relationships and on establishing relationships rather than on acquiring individual wealth and status that can come with development. As a result, a high level of stability in social and natural assets in the region was generally evident.

### 7.2.2 East New Britain Province communities

In contrast to the situation in ESP, where there is no form of resource development that has increased the level of prosperity, ENBP communities experienced low to moderate prosperity from their agriculture-based development. The average household fortnightly income of PGK522 (PGK354 higher than ESP communities) confirms this (see Tables 5.6 and 5.7). One reason for this is that the century-long history of both plantation and smallholder agriculture-based development in ENBP has allowed the majority of households to build modest levels of financial, social, physical and human assets. The moderate prosperity and stability in ENBP is also attributed to the early experiences these communities had with various modern governance systems such as community governments (Narokobi 1980). The early government system helped to facilitate the establishment of community-level assets, principally public infrastructure such as roads, hospitals, schools and community halls (Liu 2010; ENBPG 2010).

A second reason is that the relatively high levels of public infrastructure and assets provide all community members with access to these facilities. The history of community-based ownership and use of community assets also means a high level of individual investment in these resources, and of social capital. This in turn has fostered greater prosperity, in a virtuous cycle, which has lessened the competition within communities over development outcomes. This was consistent with the general characteristics described in Chapter 4, and the results presented in Chapter 5, on the current asset base of the communities. East New Britain Province, when compared to the other two provinces, has better access to public infrastructure services and markets as it has better road networks, transport, health and education.

The third reason that helped stability and prosperity is the communal ownership, and as a result, attitudes to public property in ENBP communities. Communities have the capability to invest in community-based facilities, including public infrastructure. This can be attributed to the strong and stable social and cultural interactions within the communities, and also to their ability to adapt. They are willing to accept modern concepts, having been introduced to them earlier than in WP and ESP, providing a basis for community members to see and value such facilities from a broader community perspective rather than simply in individualized terms. My personal observations throughout the study, as well the results presented in Section 5.3.2. on traditional trades such 'sande sande', depict their community-oriented behaviours. This is exemplified by the weekly Mande kivung (compulsory
government day) program for community services (see Table 5.12). The Mande kivung program requires people to do community works, including maintenance of community facilities such as cemeteries, churches, schools, health, roads, markets and other related activities as specified in their community government system rules. This ensures these facilities are maintained and sustained for future use, demonstrating collective long term ownership. This contrasts with the situation described below for WP, where community-oriented public infrastructure facilities are effectively ‘owned’ by a few individuals, leading – amongst other things - to the deteriorating conditions of the facilities and services. For example, a community based public motor vehicle (PMV) bought for the community, using the community development funds, later became the personal property of the community leaders.

Another factor that has contributed to the moderate stability and prosperity in this region, particularly in the case of the Nabata community, is the matrilineal social structure. Unlike the patriarchal communities in ESP, WP and in parts of ENBP, the Nabata community is predominantly matriarchal, and it is the women who organise meetings and make the decisions. As explained in Chapters 3.3.2.3 and 6.4.2.2, women’s roles in leading and making decisions is based on the cultural aspects of their community which vests ownership rights for land and property to female descendants. This community promotes women’s participation in development processes such as those observed in this study. This also means that the stability and prosperity of these communities is partly attributed to women’s participation and making decisions on behalf of their community. This was manifested in the moderate levels of success in stability and prosperity in this region compared to ESP and WP communities. For example, in comparison to Nabata and Liaga communities in ENBP, Nabata residents have various sources of income. Apart from cash crops (cocoa and coconut), their matrilineal-linked trade activities such as sande sande and tiptip systems described in Chapter 5.3.2 made significant contributions to household income for this community. This suggest that there are a range of factors that contribute to both stability and prosperity in this region compared to the other two regions.

7.2.3 Western Province communities

In contrast to ESP and ENBP communities, the WP communities are relatively prosperous but socially unstable. These communities are being impacted by, and are beneficiaries of, a major mining development. They are characterized by relatively high levels of physical and financial capital (see Sections 5.3, 5.4 and 5.5). For example, the large differences in average fortnightly incomes per household between WP (PGK1373), ENBP (K522) and ESP (PGK168) illustrate the financial advantage of WP communities over the other two regions (see Tables 5.7, 5.8 and 5.9). As discussed in Chapter 5, a significant amount of money was earned and spent per household on foods and other
items in these communities. Both low subsistence food production systems and high cash economy livelihood strategies observed in WP also characterize the high dependency of this communities on financial and physical assets.

Although aggregate levels of community prosperity were high, low levels of community stability reflected low levels social capital, as traditionally integrated clans and tribes split and competed for funding that lead to social conflicts, disputes and confrontations, which often turn to violence. The low level of stability in these communities can be attributed, at least in part, to the unequal sharing of benefits from the mining-based development. However, the region’s weak, unstructured and fragmented traditional social institutions also contribute, causing conflicts to escalate without traditional mechanisms to resolve them. This was reflected in the semi-nomadic lifestyle of the region’s communities, and relatively individualized asset ownership only by few people, as discussed in Chapter 5.

7.2.4 Natural resource development and its relationship to leadership modes and institutional arrangements

This section discusses relationships between vulnerabilities, consumption and spending behaviours and leadership modes.

7.2.4.1 Vulnerabilities in the three regions

In Chapter 5.5, I provided analysis of the vulnerabilities of communities in the case regions, which varied between the regions. For example, communities studied in ESP are more likely to be affected by economic risks and this could have potential impact on their livelihoods. This is because they rely more heavily on a small level of cash cropping activity for their financial needs. Communities here are also unprepared for events such floods, droughts and other such as communicable diseases. The remote geographical conditions and their inability to access better goods and service (see Chapter 4; Hanson et al. 2001) disadvantaged them in terms of preparedness to face such catastrophic events. Unlike ESP, communities in ENBP are prone to environmental risks, and these could lead severe impacts on their lives. These results are consistent with those reported by Martin (2013), who found that natural disasters such as floods and volcanic eruptions are frequent events in the region. In contrast to ESP and ENBP communities that are confronted with economic and environmental risks, the major risks confronting communities in WP are social conflicts. This particularly relates to disputes and confrontations between community leaders and communities over the manner which benefits from Ok Tedi Mining Limited operations are being shared in the region. As observed by others (e.g, Kalinoe 2010; Kepore and Imbun 2011; Mulung 2012), communities are disintegrated and
lacked social cohesion, because the affected communities claim they are not given their share of the benefits as agreed in the agreements such as the 9th and 10th CMCA supplementary agreements (Ok Tedi 2012).

In all three regions, respondents advised that they relied more on their relatives and friends in times of disasters than on other potential sources of assistance. They all responded that there is a minimal presence of government and its designated agencies in their communities. In terms of whether communities are ready to face potential risks, both ENBP and WP were more prepared on two basis: first, because of their previous experiences handing disaster-related cases and, second, because they had access to better facilities to support them. In contrast, the ESP communities did not have that capacity to contain such disasters or access external assistance.

The relationships between leadership modes and vulnerabilities in ESP and ENBP requires further investigation. Natural events such as droughts, floods, volcanic eruptions are ultimately inevitable, and the effectiveness of community leaders in response to these is hard to predict.

7.2.4.2 Consumption and spending behaviours

As I discussed in Section 5.5, the consumption and spending behaviours in each region also reflected, variously, the livelihood assets-base, strategies, development outcomes, and vulnerability conditions. These depended on the amount of money earned by individual households from the available cash income earning activities. This suggests that the decisions on what to produce, buy and consume depend critically on the assets-base and livelihood strategies. In the PNG context, household heads - particularly husbands (sometimes wives) - are those who decide what, where and when to consume and spend. The quantity and variety foods sourced and eaten and the amount of money spent on expensive items portray a level of status in the communities. This, reciprocally, implies that certain individuals and households may possess special skills or an ability to grow foods and buy items that others do not have the same opportunities to acquire; and these qualities in turn can confer leadership status on individuals.
Table 7.1: Summary of key elements of inquiry in the case study regions.

<table>
<thead>
<tr>
<th>Case study region</th>
<th>Predominant form and nature of natural resource</th>
<th>Observed Livelihoods Assets-bases</th>
<th>Observed Livelihoods strategies</th>
<th>Observed leadership modes and institutional arrangements</th>
<th>Observed development outcomes</th>
<th>Observed implications/effects/impacts</th>
</tr>
</thead>
</table>
| East Sepik Province (ESP) | Little or no development, but planned forestry project in preliminary stages | Dominated by social and natural assets. Fewer human physical and financial assets | Subsistence food productions dominated the region, with limited income earning opportunities | Influencing and participating leadership are the common modes of leadership supported by traditional institutional structures | - High stability and low prosperity  
- Increased economic vulnerabilities, but unprepared to face them | No implications due to no development impact in the region |
| East New Britain Province (ENBP) | 100 years of plantation and smallholder agriculture-based development, with some recent major planation-based development | High level of social assets, with moderate level of financial, human physical and natural assets | Both subsistence food production and cash income earning opportunities were moderately promoted. | Both influencing and participating modes of leadership are relatively strongly supported by both traditional and modern institutional structures | - Moderate prosperity and stability  
- Increased natural vulnerabilities but prepared to face them | Some disputes between communities and leaders over the outcome of the leadership decisions. |
| Western Province (WP) | Major mining project, with significant economic, environmental and social impacts, operational for over 30 years | High level of physical, financial and human and with moderate/low natural and social assets | Increased cash income earning activities and low subsistence food production systems | Predominance of influencing and participating leadership modes, supported by imposed principles and institutions. Complex institutional structures, dominated by NRDI. | -High financial, physical and human prosperity and low medium in natural and social stability -Increased natural vulnerabilities but prepared face them. | A high level of dispute between communities & leaders over the outcome of the leadership decisions. |
7.3 Relationships between livelihoods, development outcomes and leadership modes

In this section, I present and discuss a high-level characterizations and explanation of the results observed from my case studies, particularly in response to research questions 1 and 3. Table 7.1 presents a high-level characterization of the case studies in terms of the main elements of my inquiry. I discuss these in the following sections.

7.3.1 Relationship between livelihoods assets and natural resource development

This section discusses responses to first part of research question 1, which focused on livelihoods assets, consumption and spending behaviours, and livelihood strategies. The livelihood assets-bases varied across the three regions. These variations are demonstrated in Figures 5.1 & 5.2 which reflected the respective regions’ five livelihoods assets-bases – physical, financial, social, human and natural. For example, in East Sepik Province (ESP) region, social and natural assets dominate, with a weak presence of financial, physical and human assets. Communities remain entrenched in their traditional customs and their traditions, and their natural resources are intact and underdeveloped. In terms of social capital, there is stability in social relationships, cohesions, trades and exchanges amongst the people, and these are integral part of their traditional livelihoods. In the same domain, there are adequate natural resources including biodiversity, forests, land and fresh water, and these are yet to be developed in a ‘modern’ sense. However, the region has low financial, physical and human capacities as a result if the lack of development. The minimal level of these assets-base in this region is consistent with the general social-economic situations described in Chapter 4.

Unlike ESP, the East New Britain Province (ENBP) case showed moderate levels of assets-bases in all five asset classes. As indicated (Figures 5.1 & 5.2), this region has benefited from some 100 years of experience in the establishment of plantations (coconut and cocoa) and smallholder agriculture-based development, with some recent major plantation-based developments such as oil palm and balsa projects. These developments had led to the moderate levels of assets-base in the region.

Comparatively, Western Province (WP) recorded high level of physical, financial and human assets, but low levels of natural and social assets. The high and low levels of assets-bases above reflected the great impact of the major mining project operating for over 30 years, which has been very significant for these communities, and at the same time contributing considerable negative environmental and social impacts.
These results indicate that there appears to be a strong relationship between type of assets-bases and type of natural resource development that a region had experienced. In this sense, the strengths and types of livelihoods assets-bases depended on the predominant form and nature of the natural resource development projects in each region.

These conclusions are clear for the ENBP and WP communities where there is some form of developments in the region. However, development has not yet impacted on ESP communities, so one can only speculate on its outcomes. However, it seems reasonable to propose that ESP would experience losses in its natural and social assets-bases, and gain in financial, human and physical assets, should some form of resource-based development proceed.

7.3.2 Relationship between livelihoods strategies and livelihoods assets

As reported in Chapter 5, and presented in the summary Table 7.1, the adoption and production behaviours of these case study communities operate at the interface of two economic systems, the subsistence and cash economies. According to the SLF (Conway and Chambers 1991), decisions are made to maximize household needs and wants through a choice that embody multiple household needs such as food, shelter and provision other subsistence goods and important purchases. In this sense, the communities’ livelihood strategies have been motivated by different sets of community needs and wants. Accordingly, the communities’ approaches to the two economic systems varied across the three regions. It is evident that the subsistence food production systems were maintained consistently throughout the three regions, although to a lesser degree in WP, where most foods were sourced from the supermarkets in Tabubil and Kiunga. This was because WP communities were able to purchase foods with the royalties and compensation monies earned from OTML, and also because traditional lifestyles there were less sedentary. However, there was great variation in the cash earning opportunities the three regions. For instance, these were most limited in ESP. Furthermore, for ESP communities, their limited access to necessary infrastructures such roads, communications, public and administrative service centres and markets hampered their ability to increase cash income earning opportunities. Instead, these communities reverted to subsistence food production systems.

In contrast to ESP case, ENBP and WP communities had various sources of cash earning strategies. Both had three sources including income from projects, cash cropping and informal markets. Communities pursued these opportunities in various ways. For example, in ENBP, sources of income generation included a number of cash crops such as cocoa, coconut (copra) and balsa; royalties from oil palm development (KOPDP) for Liaga; and a number of informal market sales (of garden produce at main and roadside markets, and resale of wholesale goods). These increased income earning
opportunities are associated with the better established road links, access to markets and access to
town centres in ENBP. Also, the long history of agriculture developments has fostered people’s
familiarity and involvement with various ways of making money. These are also reflected in the low
to moderate level of success in the region’s all five livelihoods assets-bases.

Communities in ENBP and WP each have a similar number of sources for earning income, much
more so than those in ESP. However, the amount of money earned (Table 5.7 and 5.8) and the number
different sources (Sections 5.3 and 5.4) are greater in WP. For example, WP households receive
income of PGK562 fortnightly as royalties and compensation payments; no data is available for
ENBP’s case, for Liaga, but any such payments appear negligible. WP communities receive almost
three times more income than ENBP communities (Tables 5.7 & 5.8).

Thus, it is clear from this study that both subsistence and cash income earning strategies are
commonly practiced across to the three regions, but expressed to different extents that reflected the
circumstances and contexts of each region. These results suggest that the communities’ livelihood
strategies have been influenced predominantly by type and level of assets-bases that each region has,
and their level of cash income.

7.3.3 Natural resource development and its relationship to
institutional arrangements

As I presented in Chapter 4.3, the form and nature of the natural resource-based development,
including its pace and scale, have played a crucial role in each case, in terms of both development
outcomes and their interactions with institutional arrangements. In this section, I summarise how the
different forms and the different nature of resource development have interacted with the
communities and institutional arrangements in each region.

7.3.3.1 East Sepik Province

The case study communities in ESP are land owners of the proposed agroforestry development
project, but are yet to experience the impacts of resource-based development. In this sense, it difficult
to establish a clear relationship between its institutional structures and natural resource development
projects. Traditional institutions are still strong in these communities (see Chapter 6.4.1 and 6.7.1). In
contrast to the WP communities pre-development, however, ESP communities have higher levels of
familiarization with modern institutions, and may show a greater capacity to evolve traditional
institutions and leadership modes. This is, at least in part, because in the 30 years since mining
development began in WP, there has been greater access to education and the cash economy in ESP.
While the ESP case study community has some similarities to those pre-development in WP, there are also important differences. The ESP case study communities, while relatively isolated and poor compared to many others in PNG, have nevertheless managed to prioritize education, and there are now a number of people from these areas that have a secondary and tertiary education and who have made careers in the public service, agencies and community-based organisations. There are also community members, like myself and others within the region, who have benefited from such education by gaining employment in other parts of PNG where there is greater access to jobs. Traditional social structures in ESP are also stronger than those in WP, as communities have never been nomadic and hence clans are less fragmented. However, it is not clear how these communities and institutions would respond to a major development intervention. Although strong contrasts exist, there are also similarities between ESP and ENBP in terms of how their leadership and institutions are structured. As demonstrated in Chapter 6.6 and 6.7, both regions have a strong focus guiding their decision-making processes. A notable difference between the two regions is that ENBP communities have demonstrated a capacity to adapt new concepts, while there is no evidence of this as yet in ESP.

7.3.3.2 East New Britain Province

Unlike the ESP and WP communities, ENBP communities have been experiencing slow to moderate levels and pace of development, based on primarily commercial agricultural projects. Relative to the considerable financial benefits that came with the mining development in WP, agriculture-based projects have been contributing a modest but stable income for ENBP communities and households. This was illustrated in the case study of the recently established oil palm project (KOPDP), where there have only been limited benefits to the community. Instead, communities rely on alternative cash crops such as cocoa and coconut. In this case, I argue that the moderate pace of development has contributed to people’s capacity to accept new ideas and build relationships between modern and traditional values. Furthermore, the history of early explorations and colonization and the establishment of plantations and church institutions have encouraged communities to interact, and in the process building a strong social and economic base (Epstein 1962; Corbin 1973; Martin 2013), while at the same time becoming familiar with and incorporating modern institutions and governance practices (Martin 2013). The slow pace of development, allowing people to adapt and learn over time, was translated into the early adoption of business and entrepreneurial skills which have continued to develop within the culture of the ENBP communities (Epstein 1962; Martin 2013).

The slow to moderate pace of development in the area, compared to faster development growth associated with the mining project in Western Province, has also encouraged communities to adapt to modern ways and to integrate them with their traditional ways (Martin 2013). For example, the establishment of the first community government system in PNG in East New Britain Province was a
demonstration of the willingness to accept and adapt modern concepts (Narokobi 1980). The community government system encouraged the integration of modern concepts, using traditional values in village courts and accompanied modern mediation processes. For example, if a community member commits an offence or taboo, he or she is brought to a village court (varkurai) comprising village elders, and if found guilty, the punishment usually involves community work such as cutting grass, cleaning drains, and removing litter from towns or markets. This has allowed the communities to evolve and adapt throughout the process of development-induced behavioural change.

7.3.3.3 Western Province

In contrast to ESP and ENBP, the communities in Western Province (WP) are the landowners on which a multi-million kina mining development project has been in operation for the past 30 years. As noted in Chapter 4, the Ok Tedi Mine is of major national economic significance, has incurred irreversible environmental impacts on a local scale as well as regional, and has had major social impacts. Over the last 30 years, the traditional lifestyles and livelihoods of the case study communities, and others in the region, have been transformed markedly within one generation. For the people of WP, the Ok Tedi development intervention was rapid and ongoing, and over time provided a substantial stream of material benefits. Communities had little option but to agree to the external interventions imposed on them by project developers and associated external stakeholders, including various levels of government. Communities were pressured by the enticement of development and all its benefits at the cost of unanticipated livelihood changes which they initially had limited capacity to understand, and little capacity to communicate clearly with various external stakeholders.

While the communities were in the processes of understanding and adapting to the changes, new regulations for managing the development processes and its outcomes were imposed on them by the government, through the developers such as Ok Tedi Mining Limited (OTML), and later the Ok Tedi Development Foundations (OTDF) and the Ok Tedi Fly River Development Program (OTFRDP). These regulations required that communities, in order to participate in the development process or to have access to development benefits such as royalties and compensation, had to form institutions recognised by government. Some of the requirements included the institutional arrangements which this thesis described as New Resource Development Institutions (NRDI). The NRDI encouraged communities to form various institutions such as the Village Planning Committees (VPCs), Local Trust Foundations (LTFs), Land Owner Associations (LOAs) and women and youth associations (see Chapter 6.3.3 and Table 6.9), each of which is focused in some way on organising and directing access to benefits. The creation of NRDI necessarily led to an evolution of leadership roles at the community level, as these institutions require leaders and managers, and there was an emphasis from
government and developers on building this capacity within communities. However, these attempts have not generally been successful, for a number of reasons as discussed in Chapter 6.4 and illustrated in Table 6.9. Many of these related to the nature and status of the WP communities, which were very isolated, clan-based and nomadic, with very low levels of education, and little familiarity with Western modes of leadership and governance. This meant there was an almost complete lack of existing capacity for non-traditional leadership, even though there was enormous adaptation required by communities with little prior history of collaboration or negotiation with parties unconnected to their immediate region or people.

Further, the NRDIs were based on imposed concepts, rules and guidelines, and local community leaders and members struggled to integrate such modern concepts with their existing traditional value systems. This created clashes as a result of conflicting value systems. As a result, there have been ongoing social conflicts and disputes amongst the communities and the associated stakeholders (see Chapters, 2.6, and 6.8). There has been little real development of institutional or leadership capacity within these communities, reflecting both the rapid and substantial dislocation of communities and the disjunct between traditional and modern expectations, as well as the antipathetic environment for leadership and community development created by the ongoing tensions. In many respects, the situation is a vicious cycle with the negative aspects of each element undermining possible progress in other elements. As I described in Chapter 6.6.3, that led to a restructure and realignment of the roles and functions of OTDF and OTFRDP. It also led to the establishment of various VPCs and the Women’s Associations (OTDF 2010). In support of restructure and realignment processes, the CMCA decision making modes (discussed in Section 6.6.3) were introduced to improve some of the systems and processes involved in delivering community projects. This implies that OTML, through the OTDF, requires better approaches to meet the communities’ expectations.

Thus, in general, in ENBP and WP, the type and form of institutional arrangements depended on the type and form of resource development, particularly their alignment with the principles and concepts imposed by the developers and/ or government. At the same time, institutional arrangements were encouraged by the development outcomes such as benefits and incentives provided by the developers.

### 7.3.4 Relationship between leadership modes and natural resource development outcomes

This section explores the relationship between the outcomes of the natural resource development and the modes of leadership. To facilitate this discussion, a simple framework (Figure 7.2) incorporating relevant components was developed. The y-axis depicts the leadership modes, with traditional and modern at the extremes and hybrid forms intermediate, and the attendant modes of leadership shown
in text boxes. The x-axis represents levels of prosperity as a result of development outcomes. Each of the case studies is positioned indicatively within this framework, with annotations summarising the key features of the cases:

4. The ESP case study is located in the lower left quadrant, reflecting the low levels of income and dominance of traditional institutional and leadership structures. Here, ‘modern’ top-down institutional and leadership structures are largely absent. The arrows connecting ESP communities to other leadership modes, and scenarios for leadership in ESP with the transformative effect of natural resource development projects with question marks, signify possible development trajectories for the ESP communities.

• The ENBP case study is located around the intersection of the quadrants, reflecting the moderate aggregate levels of income and the hybrid forms of institutions and leadership. The longer history of development and adaptation to other processes in ENBP means that tensions between top-down and bottom-up institutional and leadership structures are generally weaker, and less strong than in WP.

• The WP case study is located in the top right quadrant, reflecting the high aggregate levels of income and the (imposed) modern institutional structures and leadership expectations. The arrows above and below the position indicate that communities are experiencing considerable tensions between the imposed top-down institutional and leadership structures and those that are more aligned with traditional structures that focus from the bottom up.
Figure 7.2: A model of leadership modes and development outcomes, illustrating the space the case study communities currently occupy and their associated leadership and institutional features.
The model presented in Figure 7.2 seeks to illustrate the role of leadership modes in mediating and shaping development outcomes for communities. In this section, I return to the four modes of leadership discussed in Chapters 2 and 3 (see Figure 3.2), from which I derived from the hybrid model of leadership (Hersey et.al 1996; Fiedler, 1967; Martin 2013; Joseph 2015) adopted in this study. Based on this hybrid leadership model, I identified four modes of leadership that community leaders might employ to facilitate development outcomes in the PNG context. These were the influencing (biksot), participating (trupla man), selling (mauswara) and the delegating (cultural) modes of leadership. In the following sections I present what my research in the case study regions found in relation to each of these four leadership modes.

I first explore the study findings in relation to community-level leadership. Both influencing (biksot) and participating (trupla man) modes of leadership were common throughout the three regions. These commonalities provided the basis for the four modes of leadership to exist in the communities. For example, for the influencing (biksot) leadership mode to occur, the participating (trupla man) leadership mode must first exist. By invoking the participating (trupla man) leadership mode in community meetings, leaders feel they have gained community consensus. In the traditional context of PNG, community consensus and the participatory leadership mode are common approaches to decision making (White 2006; McLeod 2007). In many respects, this is attributed to the cultural norms and beliefs, where community members show respect to their leaders, or can be too shy to speak in public meetings (Holzknecht 1996; Barker and Ietjen 1990) (see Chapter 6.6). This was also consistent with interview responses from the participants, as well as my observations throughout the study, that many members, especially youth and women, could not speak out against their elders. If they did, adverse social implications would be incurred. For example, the rest of the community would regard them as wrongdoers and that may lead to disrespect being brought to their family and clans.

The data also shows evidence of selling (mauswara) leadership existing in ENBP, as illustrated in Table 7.2. The existence of selling (mauswara) leadership also depended on the existence of both participating and influencing modes. The high incidence of selling (mauswara) leadership indicates that both participating and influencing leadership modes can work to integrate modern and traditional practices. The process of integration of modern and traditions concepts further increased the level of selling (mauswara) leadership. The delegating leadership mode is most evident in WP, which is supported by the existence of both the influencing and participating leadership modes in the region. In this case, the levels of influencing and participating leadership modes were consistent with other regions; however, the presence of natural resource development added increased tasks and responsibilities (e.g., resource distribution decisions made through imposed institutions) and lessens
relationship building activities, due to lack of consultations between leaders and communities. As evident in the tasks and responsibilities presented in Chapter 6.5.1 to 6.5.3, ESP and ENBP leader had fewer leadership responsibilities than WP leaders. This combination resulted in higher incidences of delegating (cultural) leadership in WP. In Table 7.2, the relationships between the four leadership modes are summarized, highlighting relevant features that reflect their roles in mediating and shaping the development outcomes of the communities.

Table 7.2: Features reflecting the four leadership modes observed in case study communities

<table>
<thead>
<tr>
<th>Leadership mode</th>
<th>Features reflecting the modes of leadership in studied regions</th>
</tr>
</thead>
</table>
| Influencing (bikso) | - Influencing (bikso) mode is present everywhere, and mediates participating mode to varying degrees.  
- Reflects the conventional role of leaders to take decisions on behalf of their communities.  
- Traditional and customary respects are accorded to community leaders (see Chapter 6.7) |
| Participating (trupla man) | - Participating (trupla man) mode reflects both traditional community (e.g., ESP) and ‘traditional’ government (ENBP) processes.  
- Basis of decision making processes in PNG traditional context  
- Reflects imposed institutional rules, that allows everyone to participate in meeting processes (especially in ENBP and WP)  
- Reflects traditional structures where there is little or no development impacts (e.g., ESP). |
| Selling (mauswara) | - Selling (mauswara) mode is more evident in ENBP because of higher levels of political sophistication developed over time due to external involvement in the province.  
- Moderate levels of prosperity and stability enables more selling leadership mode because there are high social relationships and tasks through both traditional and modern institutional processes.  
- Communities’ ability to adapt and incorporate both traditional and modern concepts supports greater expression of selling leadership mode.  
- The increase in tasks and relationships from moderate development growth in the region also serves to increase the selling leadership mode. |
| Delegating (cultural) | - Delegating (cultural) mode is more evident in WP because of new resource development institutions (NRDI), and is an artefact of this rather than something ‘real’ in terms of decision outcomes  
- NRDI in this region also means increased tasks for community leaders but low relationships amongst the communities, hence less consultation between leaders and communities on important decisions.  
- Reflects the externally imposed concepts. |

Drawing from data in Tables 7.1 and 7.2, I conclude that leadership modes varied in the three regions, particularly in response to the processes that transformed livelihood assets-bases, livelihood strategies,
institutional structures and development outcomes in the regions. In turn, these transformations occurred as result of the type and form of natural resource development projects, and of the phase and history of these developments which initially impacted the livelihood systems.

In the next section, I will discuss the four modes of leadership in the context of PNG development outcomes, and consider why each of these leadership modes are more or less common in the regions studied.

### 7.3.5 Dominance of leadership modes in the case studies

On the question of which leadership modes were dominant, I found that influencing (*Bikson*) and participating (*trupla man*) modes were equally dominant modes in all regions. They were seen as being of comparable importance in WP and ENBP; in contrast, the participating mode was relatively more important in ESP. Selling (*mauswara*) and delegating (*cultural*) modes were recognised as being practiced in all three regions; however these two leadership modes were less important than influencing and participating modes. Respondents identified the selling mode as being more important in ENBP and the delegating mode more important in WP. These conclusions are based on the results presented in Chapter 6 (Tables 6.1-3 and Figures 6.1 & 2)

However, the results from respondents need further interpretation to understand the true nature of leadership in each region. Survey respondents, particularly community leaders in community meetings, advised that the participating leadership is the most commonly used mode in community meetings. However, responses from individual household interviews in all study regions highlighted that participating (*trupla man*) leadership mode is commonly undermined by the influencing (*bikson*) leadership mode. Although participatory approaches were used to conduct community meetings (see Chapters 6.6 and 6.7), many respondents stated that, while they participate in meetings, the leaders make the final decisions. This implies that the influencing (*bikson*) leadership mode is actually a much more dominant mode in these communities than was recorded from the survey responses. The next four sections (7.6.1 to 7.6.4) explore the four modes of leadership in detail, and are discussed in the order from least to most frequently reported.

#### 7.3.5.1 Selling (*mauswara*) leadership mode

Unlike influencing, participating and delegating modes of leadership, which had varying effects on the communities studied, the selling mode appeared to be little present in the other two regions (see Section 6.2 and Table 7.2), and more evident in the ENBP communities.
Unlike influencing, participating and delegating modes of leadership, which had varying effects on the communities studied, the selling mode appeared to be little present in the other two regions (see Section 6.2 and Table 7.3), and more evident in the ENBP communities.

**Why is the selling leadership mode infrequently seen in communities?**
The main reason that selling leadership was not commonly found was because of the absence of coincidence of high tasks and high relationships, except for the case of ENBP. The case in WP, with significant levels of development opportunities, and in ESP with negligible development opportunities, present environments that are unfavourable for promoting high tasks and high relations. ENBP communities showed higher levels of selling leadership mode than WP and ESP because ENBP communities have a stable and adaptive environment that allows them to adopt a selling leadership mode. This also means communities trust their leaders to adapt and implement new concepts, integrating them with their traditional concepts, for the betterment of their livelihoods.

7.3.5.2 Delegating (*cultural*) leadership
As with the selling (*mauswara*) leadership mode, delegating (*cultural*) leadership also was seldom seen in the communities studied (see section 6.2 and Table 7.2), with WP showing higher adoption of this mode than other communities.

**Why the delegating leadership mode is uncommonly found?**
There are two principal reasons for the lesser incidences of delegating leadership mode in this study. The first reason is related to the limited roles and responsibilities that were observed in the study regions for leaders, except for the WP communities. As described in Chapter 6.6, both ESP and ENBP leaders assumed fewer tasks when compared to those leaders in WP. The second reason is because of the lack of trust and confidence accorded to young leaders by the older generation of leaders. This was common throughout all three study regions, with participants explaining that older generation leaders could not easily relinquish leadership responsibilities to younger leaders. For example, the tension between younger and older generations of leaders in one of the villages discussed in Chapter 5 supports this argument, and is seen as a barrier to promoting the delegating leadership mode.
Leaders in communities in resource development regions such as WP and parts of ENBP (particularly in Liaga) would have more responsibilities than those in less to moderate development-impacted regions such as ESP and other parts of ENBP. Thus, the likelihood of delegating leadership being adopted depends on the available tasks within a given environment, as well as the trust and relationships that have been built between the older and younger generations of leaders.

7.3.5.3 Influencing (biksot) leadership mode

Influencing (biksot) mode was commonly observed across the three regions studied (Table 7.2). Its predominance was observed in a number of ways, for example, in the way community meetings and interviews were held. In these meetings, men took the lead roles in most case in the eight patrilineal communities, while women took the lead roles in the matrilineal society of Nabata in ENBP (see Chapter 4.2.2 and Table 5.1). The three regions studied are equally likely to have influencing leadership dominate leadership modes (Table 7.2). This is because influencing (biksot) mode is present everywhere with the PNG society, and it overrides participating mode to varying degrees. This is largely because masculine behaviours dominates most of the leadership role and decision-making roles in PNG.

Why is influencing leadership mode dominant throughout the study regions?

My research found that influencing (biksot) leadership was common and comparatively dominant amongst the communities in the three study regions. There are number of reasons for this. The first is because of the different levels of livelihood assets-bases available in the study regions, and the various livelihood strategies that communities pursued in these contexts. A second reason is because of the development outcomes, in terms of benefits and incentives, provided by the developers. A third reason is because the institutions imposed on communities by government and developers in seeking to manage these transformations (see section 7.2 and Figure 7.2) were not readily accepted by the communities, and led to various conflicts in the communities. For example, leadership in the WP communities is now driven primarily by externally imposed concepts and values; these are not permeating through to the communities, and there is a clear clash between modern and traditional values. This has also led to social conflicts amongst local communities, particularly between those leaders supporting the external institutions and those that see traditional practices as important.

A fourth reason is the form and nature of development in the WP region (as described in Chapters 4.3 and 7.3), which was previously ‘undeveloped’, in almost all senses of the word. The rapid development of the Ok Tedi Mine, and the scale of its impact, transformed communities by presenting new livelihood options and by constraining established ones. It catalyzed new forms of ‘community’, and required decisions of them that were completely different to any prior experience. The fifth
reason that influencing \textit{(bkisot)} leadership is common throughout the study regions is because of the difference in development stages of natural resource projects in each of the regions and other forms of leadership that have arisen as a result of development.

Unlike in WP, the dominance of the influencing mode of leadership in ENBP and ESP has resulted from a lack of competition for positions and power to have access to benefits within communities. In these communities, particularly in ENBP, new modern practices or institutions have been introduced slowly because their agricultural resource-based development has been at a slow to moderate pace. The demonstration of stability and prosperity presented in Figure 7.2 shows that the influencing leadership mode is equally prevalent to ESP and WP (see Table 7.3). Similarly, strong social stability, traditional institutional structures and absence of advanced stage development projects in ESP have manifested in less use of the influencing leadership mode. In addition, major failures in development institutions such as OTDF and other community based institutions such as land owner associations, women associations and youth groups have also contributed to the frequency of influencing leadership in the communities. Also, the communities’ lack of capacity to better access to appropriate skills and knowledge has supported the use of this leadership mode.

Apart from these reasons, other factors such as cultural identity, traditional rivalry, and clan dominance behaviour within and between traditional clan and tribal systems have also contributed to the expression of influencing leadership. Thus, it can be argued that the influencing leadership mode occurs regardless of the livelihoods assets, livelihoods strategies, development outcomes, type of resource development and the stages of development. While both participating and influencing modes (discussed in Section 7.3) are evident in the study regions, in essence the influencing leadership mode is more significant as it overrides many of the decisions made collectively.

\section*{7.3.5.4 Participating \textit{(trupla man)} leadership mode}

As with influencing \textit{(biksot)} leadership discussed above, participating \textit{(trupla man)} leadership was also common throughout the case study regions. There was a stronger expression of participating leadership in ESP than in WP or ENBP. This implies that there are strong traditional institutions, with fewer influences from external factors, in ESP.

Both WP and ENBP communities showed similar results in terms of the frequency of participating leadership mode. Despite this qualitative evidence, I observed more evidence of participating leadership in ENBP than WP, exemplified by WP community members reporting differences between their leaders’ interpretations of their leadership, as participating, and their own interpretation of the leadership, as influencing. This indicates that ENBP communities could more easily adapt to new concepts and changes in their communities than WP communities. For ENBP communities,
participating and influencing leaders had a good working relationship with the community. Thus, generally these results suggest that the expectations and practices of participating (trupla man) leaders mediate the level of influencing (biksot) leadership in ENBP in a positive and coherent way, but in WP the lack of coherence in interpretations of leadership suggests the participating mode is not successfully mediating the level of influencing leadership.

Why is participating (trupla man) leadership mode dominant in the case study regions?

As with influencing (biksot) leadership presented above, there are various factors that support participating (trupla man) leadership in these three regions. With regard to WP and ENBP study cases, ESP leadership was driven by strong traditional social structures and practices. This is because the communities here are guided by their traditional and cultural rules and practices including trade, ceremonies and feasts. This encourages communities to build relationships amongst themselves and minimize competition for resources and leadership positions. This argument is consistent with the results presented in Chapter 6.7, that participating leadership was highly regarded and supported by the traditional kundi-lineage decision-making styles described in Chapter 6.7. This reinforces the understanding that modern concepts that usually come with resource development are yet to impact these communities.

In contrast to ESP communities, participating (trupla man) leadership mode in ENBP and WP was motivated by the moderate to fast pace of development projects in their regions. In ENBP, it was also encouraged by the moderate level of stability and prosperity witnessed in the region (Figure 7.1), and the period of time over which development occurred (Table 7.2). This allowed their traditional ideas of leadership to evolve throughout the period of colonization and development, with the support of church institutions and establishments of commercial agricultural plantations by the early colonizers (Corbin 1973; Epstein 1962; Liu 2010; Firth, 1982). Subsequently, the establishment of a community government systems by Australia in the early 1950s and 1960s also encouraged stable social systems and structures. That gave this region strong institutional and leadership structures. Although WP is also experiencing similar participating modes of leadership to ENBP, qualitative evidence indicates WP demonstrated lesser participation leadership mode in comparison to ENBP.

As I have argued earlier in sections 7.2 and 7.3, the main reason that participating (trupla man) leadership has featured throughout the study regions is because of the combination of rapid development interventions and the impact these had on livelihoods, in contrast to the slower pace of the communities’ capacity to accept and adapt new concepts.
7.3.5 Emerging leadership trends in the study regions

This study also reveals that, in addition to the occurrence of the four leadership modes discussed above, other leadership models are also evident. As I have discussed in Chapter 2.2.4 and 2.10.3, and Chapter 6.4, there are various hybrid leadership models emerging in PNG and throughout the South Pacific.

For example, the bigshot model described by Martin (2013) in East New Britain Province continues to play an important role in this contemporary communities and economic of the East New Britain people. Joseph’s (2015) discussion of a values-based approaches to leadership in South Pacific is also relevant here. Elements of this approach were clearly demonstrated across the three regions, in that customary values remain critical in leadership at the community level. I also found evidence of the Grand Chief (GC) model. Historically and customarily, the GC concept was prominent amongst the Chieftain societies in PNG, and the title was bequeathed to the chief who made an overwhelming contributions in terms of customary moral obligations (Chowning 1979; Tamakoshi 1997; Dom 2015). In the last decade or so, the GC title has also been adopted into PNG political system, in which politicians are accorded this title. Politicians are happy with such recognition and title at the national level, and it offers a degree of influence in the rural communities, when people see their elected Member of Parliament as Chief or a Grand Chief, with the according status. This appropriation of the GC title places MP in something of a dilemma, as the status offers opportunities to better serve their people and the government, but also implies a level of status and authority; it is certainly an example of hybrid leadership, integrating both the modern and traditional leadership concepts. The emergence of the bigshot and GC leadership models demonstrate the incorporation of ‘South Pacific’ values into contemporary political leadership, as described Chapter 2 (Section 2.10.3).

Another form of hybrid leadership was observed in WP, in the appointment of the Village Planning Committees (VPCs) (see Chapter 6.4.3), which combined both traditional and modern elements. In ENBP, hybrid leadership was manifested in the established practice of integrating traditional mediation styles with modern community government systems (see Chapter 6.8; Narokobi 1980). However, there is little evidence of hybrid leadership practices being adopted in ESP communities. The emergence of hybrid forms of leadership may depend on how communities define leadership and how readily they accept and adapt to new forms of leadership in their communities. For example, encouraging influencing (biksot) leadership may be detrimental to WP communities, but could work better in other regions such as ENBP, as I have discussed in Chapter 6.4. The outcomes depend on how communities develop in terms of building relationships and capacity for those forms of leadership that require these, how they adapt to new ideas, and how they are able to incorporate new ideas and structures of leadership with those of traditional leadership roles and expectations.
Exploring relationships between the six factors investigated in Table 7.2 and other factors relevant to this study (such as roles of leaders, pathways to leadership roles, leadership modes and decision making styles) could inform thinking and actions to develop more appropriate and effective forms of community level leadership in PNG. Given the importance of livelihood assets, livelihood strategies, development outcomes, institutional structures to manage the development process, a focus on institutional strengthening at both local and external levels would be highly desirable. For example, the establishment of institutions such as OTDF and OTFRDP in WP, and other community-based institutions (such as those presented in Chapter 2), and allowing them to operate independently without undue influence from developers and government, could be one pathway to the necessary institutional and capacity development. On this basis, ESP communities that are yet to be impacted by resource-based development could consider whether establishing independently-operated institutions ahead of development is an option they could pursue to strengthen the likelihood that benefits from the development are maximized. The obvious constraint and paradox is that resources are required to establish such institutions and build capacity, and at present in PNG, such resources come only from development. This identifies a role for non-governmental and community-based organisation able to generate external funding for such initiatives.

With regard to the participating (trupla man) leadership mode, the traditional practices on which it is based remain strong in the case study regions, particularly in ENBP and ESP. In ENBP these practices are also supported by the modern leadership and institutional structures such as churches, ward councils and community governments; in ESP, society remains dominated by traditional practices. In ENBP, both traditional and modern concepts are generally working well together. However, it is unclear whether these collaborative leadership approaches will endure in ENBP as the province becomes more impacted by major natural resource-based development.

The results of this study suggest that community leaders in areas that are not yet impacted by natural resource developments (e.g., ESP) should focus on strengthening and maintaining traditional institutions, in advance of negotiations over suitable institutions and processes for distributing development benefits and outcomes. Further research is required to examine whether and how community leaders in regions that have been impacted by the natural resource developments (e.g., WP) could redevelop, re-establish or invest in traditional institutions and practices to foster the achievement of both stability and prosperity.

7.3.6 Leadership development links in contemporary PNG

In this section, I discuss how the four leadership modes are affecting the communities in the three study regions. I focus on exploring how these leadership modes contribute to the shaping of the
communities. There is limited evidence with regard to selling (*mauswara*) leadership, because it occurs less frequently in the communities (Table 7.3). Similarly, delegating (*cultural*) leadership was also less common, with the exception of WP, where it had a relatively strong influence. This was linked to the rules and regulations imposed by new resource development institutions.

In the WP communities, the consequence of the influencing (*biksot*) mode of leadership has been conflict, disunity, and a lack of social cohesiveness. This in turn has disadvantaged communities from meaningfully participating in development processes. In the absence of social cohesiveness, influencing leadership has favoured a few individuals, particularly the leaders and elite community members, who are benefitting more from development outcomes, at the expense of the community more generally. This mode of leadership is becoming more prevalent in many parts of PNG, as those observed by Mullins and Flaherty (1995) in Madang, and Filer and Sekhran (1998) in Western New Britain, Western and East Sepik Province, in the case of logging projects. In these cases, executives of the respective landowner associations have been the primary beneficiaries of the royalties and compensation payments made by logging companies to landowners. Consequently, most of these institutions became dysfunctional.

However, this study found that, in ENBP, communities that have experienced slow to moderate forms of development are progressively absorbing the modern, imposed concepts into their societies. For the ESP communities, influencing (*biksot*) leadership has had less impact. This is also in large part because there is little competition for resources from large resource-based development projects.

The participating (*trupla man*) leadership mode affects communities in a number of ways. There are several possible explanations for this result. The main one is through the community decision-making processes discussed in Chapters 6.5 and 6.7. I observed that participating (*trupla man*) leadership mode was commonly found in all three regions. It was also evident that this leadership mode was largely linked to the decision-making styles discussed Section in 6.7, viz. that community leaders discuss problems with community members but make the final decisions themselves. This was the reason for the conflicting views between the survey results and what appears to be the actual situation in these communities (see Chapter 7.4, Table 7.2). Another important consequence of the participating leadership mode is the enhancement of relationship within the communities. As discussed in Chapters 6.9, participating (*trupla man*) mode encourages communities to get together and discuss issues affecting their communities. In this process, people create and maintain personal relationships and share new ideas.

Participating (*trupla man*) leadership was common in all regions, but for varied reasons. For example, in WP participating leadership was motivated by the increased livelihoods assets base, livelihood strategies, natural resource development outcomes and institutional structures. In ENBP, participating leadership exists because of their leaders’ capacity to accept new ideas and incorporate them with the
existing traditional concepts. In ESP, participating leadership is strongly linked to their traditional cultures and practices.

As I argued in Chapter 6.2.1, that dominant presence of participating \textit{(trupla man)} leadership was strongly linked to the traditional culture and institutional structures. This encourages the traditional consensus and consultative approach to decisions-making, similar to the consultative \textit{laen} and \textit{kundi} lineage decision-making styles described in Chapter 6.7. Whilst there remains a strong relationship between participating leadership mode and communities in ESP and ENBP, this traditional approach has failed to effectively mediate the stronger tendencies to influencing \textit{(biksot)} leadership in WP communities.

In the next section, I discuss the implications of the key issues presented above on the communities in relation to natural resource development projects, which is the focus of research question 3.

### 7.4 Leadership implications

This section discusses research question 3, which focused on implications for my results for community leadership and for other institutions that are seeking to facilitate development in PNG's rural communities. As reported in Chapter 6.8, there were strong perceptions within communities about the implications of current modes of leadership. Those most commonly mentioned were related to unfairness; self-interest; abuse of power; misuse of community funds, lack of leadership abilities and skills; leaders as initiators of disputes between communities; bypassing of legal processes; and bypassing established protocols and guidelines (Figure 6.5). Most of these perceptions were related to sharing of benefits derived from natural resource development projects.

As summarized in Figure 6.5, there were both commonalities and differences between ENBP and WP communities in perception about leaders’ and communities’ behaviour and their implications for development. Perceptions that leaders did not treat people equitably, and that they favoured self-interest over community good, were common. There was also a sense that leaders acted as agents for fostering rather than resolving disputes. When respondents were asked to consider community issues in relation to development outcomes, they identified disputes within communities, lack of respect for leaders, and the encouragement of non-consensus decisions as issues in both regions; social fragmentation was much more of an issue in WP than ENBP. These results reflect the type of development benefits distributed in their respective regions. In some senses, both communities and their leaders appear to be blaming each other for what may have transpired as a consequences of the nature of leadership in the communities.
These results also reflect a lack of agreement between communities and their leaders about preferences and choices for development outcomes. This is consistent with Mulung's (2012) findings that PNG landowners have their own preferences based on their own needs and wants, and with the results of previous studies (e.g. Banks 2008; Kepore and Imbun 2011) of the impacts of developments on communities in PNG.

7.5 Chapter Conclusion

This section focuses on bringing together the findings of the research. It highlights the key for building effective leadership in PNG rural communities that have emerged from this case study.

The study revealed that in East Sepik Province (ESP), there is as yet no relationship between natural resource development opportunities, leadership modes, and prosperity and stability. Communities remain driven by their traditional values and principles, because the region has not been impacted by a major development project as yet. In East New Britain Province (ENBP), the main driver that influenced their leadership modes was the slow to moderate development the followed agricultural-based development, and their intersection with both traditional and modern modes of governance and leadership. The Western Province (WP) case is indicative of the consequences of major development impacting on communities that were not well prepared for modern forms of governance or development, and where, as a result, increased prosperity has led to increased tensions and conflict with communities, which appear to be exacerbated by the behaviour of at least some community leaders.

The case studies suggest that, in the PNG context, there is a relationship between community level leadership and development outcomes, and that significant development impacts pose significant challenges to community leadership. Where hybrid forms of leadership have developed, and where more community-oriented behaviours have been fostered, the adverse impacts of development on communities may be mitigated or contained.

In the next Chapter, I will conclude the thesis by summarizing key findings and reflecting on the implications of conclusions presented in this Chapter.
Chapter 8: Conclusions, implications, limitations and recommendations

8.1 Introduction

As stated in Chapter 1, the purpose of this research was to better understand the different modes of community leadership, how they functioned in different resource development contexts in Papua New Guinea (PNG), and the effects those leadership modes have on development outcomes - particularly prosperity and stability at the community level. Chapters 2, 3 and 4 presented the literature and theoretical frameworks, and methodologies and case study contexts, in which the study was situated.

The findings of the study and its implications are presented in Chapters 5, 6 and 7. This chapter summarises the principal conclusions of the research, in terms of the research questions, and then considers the implications for improving development outcomes in terms of the prosperity and stability for rural PNG communities.

The overarching research question was:

*Are there forms of community leadership that enhance livelihood outcomes in the context of resource-based development in rural communities, from the case study data in three regions of PNG?*

This primary research question was addressed through answering the following three subsidiary questions;

1. What were the livelihood assets, strategies, the institutional structures, and leadership modes evident in the communities in the three case studies?

2. What were the effects of these on the development outcomes of stability and prosperity?; and

3. What were the implications for local and other level institutions and actors seeking to facilitate development?

In relation to the first subsidiary question, I found that there were both commonalities and differences in livelihood assets, strategies, institutional and leadership modes evident in the three case study regions.

In terms of livelihood assets, ESP has the strongest social and natural assets compared to ENBP and WP. In contrast, financial, human and physical assets are rated as much stronger in WP than in ESP or ENBP. ESP and ENBP have a more similar pattern of asset distribution than does WP. However, ENBP has a more balanced distribution of assets across the different classes.
In relation to the livelihood strategies pursued in case study communities, the study suggests that subsistence food production systems and the associated subsistence economy remain of fundamental importance in all of the three regions studied. The ESP region is yet to be impacted by major development, and has limited exposure to outside influences; there, subsistence food production strategies are the dominant contributor to livelihoods. In contrast, ENBP communities are engaged strongly in both subsistence and cash income earning opportunities. This is encouraged by improved and increased asset-bases (i.e., roads links, schools, access to markets and services) that the region. Communities in WP, despite the development interventions from Ok Tedi Mining Limited (OTML), rely much more on the cash economy than on subsistence food production. This is due partly due to their traditional emphasis on foraging rather than gardening, and partly to the money they received from OTML as royalties and compensation, allowing them to rely more on store-bought food. Compared to ESP and ENBP, WP has increased levels of economic opportunities reflecting the relatively greater significance of the cash economy. This was driven largely by the opportunities provided by OTML as the main source of income and influence to these communities, in contrast to the lack of such opportunities or interventions in ESP and ENBP.

The institutional structures across the three regions varied in many respects. The low development status of ESP was reflected in the absence of development institutions in the region, and the preeminence of traditional institutions. In ENBP, there are a relatively high number of government and church institutions compared to ESP and WP. This conclusion is consistent with observations by Epstein (1968), Simet (1991), Neumann (1992) and Martin (2013), that ENBP communities have slowly transformed into a modern society compared to the rest of PNG, as a consequence of the long history of presence of churches and agricultural development. In WP, there was a higher number of new resource development institutions, as a directly consequence of OTML development interventions, and particularly since the conclusion of the CMCA. The CMCA catalysed the formation of institutions to promote communities’ participation in the development programs.

In terms of leadership modes, all four leadership modes - influencing (biksot), participating (trupla man), selling (mauswara) and delegating (cultural) - were evident in all regions. Both influencing (biksot) and participating (cultural) leadership modes were found to be equally the primary leadership modes across the three regions. While a much higher proportion of ENPB respondents identified selling (mauswara) mode as dominant than in ESP or WP, a similar proportion in WP respondents identified delegating (cultural) leadership mode as dominant. These results generally reflect the particular circumstances of the region, including the leadership roles and responsibilities created by development activities, and the levels of trust between the leaders and communities for delivering the outcomes.
In response to the second subsidiary research question, the results suggest that the effects of leadership modes on the development outcomes of stability and prosperity varied in many respects across the three regions. This reflected variation in the assets base, in livelihood strategies, in the form and strength of institutional arrangements, in the nature and pace of resource development at the community level, and in the mode of community-level leadership. Western Province communities, who are the recipients of significant development benefits from the major mining project, showed high levels of prosperity in terms of their financial and physical assets base, but poor social stability. The ENBP communities, with their experience of agriculturally-based development that was relatively slow in its pace and smaller in scale compared to WP, demonstrate moderate levels of prosperity and stability. The ESP communities, where development impacts have yet to occur, demonstrate high stability in social and natural assets but were significantly poorer in financial, physical and human assets. Among the case studies, there is no single conjunction of high levels of both prosperity and stability, and thus no mode of leadership unequivocally associated with both.

With regard to the third subsidiary research question, the implications of the results described above varied across the three regions, largely as a consequence of the tensions between modern and traditional value systems. For example, the case study communities of WP showed that modern institutional arrangements imposed in conjunction with major rapidly-implemented resource development can undermine the stability of traditional institutions and communities, as they created opportunities for influencing leadership where leaders sought to maximize their own benefits from village level committees and other formalised positions. These imposed institutional structures did not build from existing traditional participating modes, which have led to greater conflict. The ENBP case showed that hybrid institutional arrangements, with strong foundations in traditional participating leadership modes, can achieve the converse of WP experience, and deliver moderate levels of stability and prosperity. The results from these two case study regions imply that leadership modes that lead to benefits for a few individuals can be mediated, to varying degrees, by more participatory modes, provided they draw from traditional structures. The East Sepik Province case study communities, in comparison to those in WP and ENBP, have yet to experience resource-based development. These communities remain based on their traditional cultures and practices, and may be vulnerable to adverse impacts of natural resource-based development in the future.

Together, these results mean that, in terms of the primary research question, there is no simple answer as to whether there are forms of community leadership that enhance livelihoods outcomes in the context of resource based development in rural communities in PNG. It is evident however, that if community leadership is to deliver both prosperity and stability, it needs to both recognize and draw from the existing livelihoods assets base and livelihood strategies, and from traditional and modern
institutional structures, and link them with the expectations and aspirations that communities have of their leaders. The situation in ENBP seems to best embody this amongst the case studies.

8.2 Key findings from the study

The findings from this study have shown that community leadership needs to be situated in existing livelihood systems, natural resource development context and the existing traditional and modern leadership structures. When existing livelihood systems, traditional and modern leadership modes operate in isolation and are disconnected, value clashes between traditional and modern contexts can emerge. In Western Province, the major development that took place rapidly alongside weak traditional structures with no experience of modern institutions created opportunities for leaders to seek to maximize their own benefits. In contrast, the East New Britain Province communities have a more stable, evolving and adaptive leadership structures, with strong social and cultural systems. This was supported by the early development processes through establishment of church institutions and commercial agricultural plantations that encouraged permanent settlement of communities (Epstein 1962; Finney 1973; Liu 2010; Martin 2013). For the East Sepik Province communities, leadership modes reflected their traditional leadership practices with little influence of introduced ideas.

This study suggests that community leaders in areas that have fewer assets-base, livelihood strategies or institutional structures due to lack of natural resource developments require support from responsible developers. This support is required from national and provincial governments, and can be facilitated by NGOs and responsible developers; it should focus on strengthening traditional institutions, and helping theme evolve to accommodate modern demands. This should take place in advance of negotiations over suitable institutions and processes for facilitating development and outcomes. In those communities that are already impacted by development projects, such as those in WP, governments, developers and NGOs should consider redeveloping, revisiting or investing in traditional institutions and practices to improve the stability of the communities.

In terms of how more effective leadership might best be fostered in PNG rural communities, results of this study and other work (Mulung 2012; Ambang 2007; Liu 2010; Martin 2013) suggest a number of learnings from experiences from other development situations. These include building a portfolio of and capacity for good leadership practices, fostering livelihood systems and institutional systems that are resilient in the context of development, and promoting the integration of traditional and modern concepts of leadership and institutions, as has occurred in ENBP (Martin 2013). Learning and sharing experiences from others and touring similar case study sites and situations of vulnerability, such as those observed in WP, are important for PNG rural communities, especially for cases such as ESP where development is yet to impact the region. In PNG, this has happened through study tours and
exposure visits by communities, particularly by landowners, to other development projects. It is also the case that benefit distribution and sharing arrangements for a particular project can be informed by those developed for others; for example, the Lihir and Morobe Mining Joint Venture projects have relatively successfully arrangements (OTML 2009; Liu 2010).

Furthermore, such exposure and experiences allow communities to build relationships and capacity to better anticipate and cope with development changes, and with the opportunities that come with development. Communities will be better informed and in a position to plan for improved opportunities from development interventions.

8.3 Constraints to improving leadership practices in PNG rural communities

Building on the key lessons learnt from this study, I argue that leadership development with a focus on community capacity building should underpin more effective leadership, community participation and resource development projects. For community capacity building to be successful, its focus should be on addressing key constraints that preclude effective leadership. Three principal constraints that my research suggests are fundamentally important are those associated with education, landowner legitimacy and clashes of values.

8.3.1 Education

Education is a fundamental issue in terms of its role in addressing a lack of knowledge and skills for leadership. These can be alleviated by building community capacity through knowledge and skills development and integration. As noted in Chapters 1, 4 and 7, one of the root causes of leadership failure of resource-based development communities is their lack of knowledge and capacity to cope with new resource development concepts and consequences. As discussed in Chapter 5, education levels vary across case study communities, but are generally low as a consequence of lack of access to primary, secondary and technical and higher education. In the following section, I discuss how capacity building, particularly of the knowledge and skills base of the community, influence leadership decisions about resource-based development. It was evident in my research and my general observations throughout the case study regions were that levels of educational qualification and technical skills play a critical role in the household and communities’ decision-making processes. An important finding of this study is that those qualifications in turn relate to community leaders’ and the communities’ ability to make informed decisions. As shown in Table 5.2, most survey participants were between the ages of 20-30 years, and had only primary school education.
In the following section, I discuss the importance of education and qualifications in terms of skills and the ability to make informed decisions.

8.3.1.1 Educational qualifications, skills and opportunities

As observed throughout the study communities, human assets, particularly knowledge and skills, affected communities’ decisions about development outcomes. For example, the level of educational qualification and technical knowledge of a particular leader plays a critical role in the decisions he or she makes at both household and community levels. Other studies (e.g., Liu 2010; Mulung 2012) noted that educational qualifications and skills relevant to formal employment opportunities affect household decisions in many ways, such as a lack of supply of labour to skilled market sectors and those related to capacity of communities to make informed decisions about livelihood options. Improving the level of education qualifications in communities would help them make decisions in a broader context, rather than just within the context of their traditional knowledge and perspectives.

Results of this study also suggest that there is limited number of skill-based and educated members in these communities. This means the non-skilled and poorly educated are those centrally engaged in development decision-making processes. This in turn constrains opportunities for community members to acquire further technical skills that would enable them to earn higher incomes associated with natural resource development opportunities. This was evident primarily among the WP study communities, where most households could not benefit from the local demand for skilled labour from OTML, as they lacked the necessary skills. A similar situation was also observed in the ENBP study region where skilled labour was sourced from outside of the project (KOPDP and other existing plantations) areas. In the ESP region, the situation was different - people with the necessary education and skills sought employment elsewhere, within the country, for example in East and West New Britain Provinces’ Oil Palm Resettlement Scheme and plantations (Curry 1992). As well as its direct association with leadership, education and skill-building are important in transforming natural resource development into local-level prosperity.

8.3.1.2 Technical skills and the ability to make informed leadership decisions

The ability to make informed leadership decisions was a major constraint observed associated with decisions associated with sharing of development benefits across the three case study regions. This is an important obstacle that affects community leaders’ resource development decisions. This, issue relates in particular to the communities’ poor participation in decision making processes; which linked to the existing low levels of training and awareness provided to the communities by the
government and developers, as well as developers’ and governments’ inability to work with existing community structures. As with Mulung’s (2012) observations, communities investigated in this study still function in an oral tradition of communication. Consistent with Mulung’s (2012), findings, my results also suggest that the majority of survey participants lacked the ability to master basic skills in reading, writing and mathematics, despite attaining basic qualifications at primary and secondary levels. Without basic education-based skills, communities lack what is needed to interpret important information about development and decision-making to achieve better development outcomes. It was also evident from the study that knowledge beyond traditional knowledge is critical for modern decision making, yet many people in PNG rural communities lack the foundations necessary to engage with and use this new knowledge.

8.3.2 Landowner’s legitimacy and resource development institutional rules

Results from the study demonstrate that there are disconnects and misunderstandings between traditional and modern concepts. Other studies such as those of Ambang (2007), Prideaux (2007) and Martin (2013) also suggest that it is very difficult to impose foreign concepts on traditional cultures in Papua New Guinea. More generally, it is difficult to integrate foreign concepts into indigenous traditional culture (Anderson 2015). This section discusses the importance of land in these case study communities, and its consequences for development outcomes. To understand this, it is necessary to discuss the community leader’s legitimate roles in the leadership structures of new resource development institutions. The executive members of the New Resource Development Institutions (NRDI) observed in this study are considered to be the legitimate community leaders in WP; and traditional ‘lualuas’ (clan elders), ward members and customary leaders function in ENBP and ESP.

The study showed that clashes between modern and PNG traditional values were common across the three regions, and often related to the existence of various cultures and traditions that led to conflicts between the primary and subsidiary landowners over who should claim ownership to the land. As pointed out in Chapters 2.6 and 6.7, the PNG Constitution recognises the primacy of traditional landowners over land and resource development. Thus, important decisions about the use and development of the natural resources rest with the legitimate landowners.

However, NRDI - whilst appreciating the legitimacy of landowners in assuming leadership roles - are also challenged by these traditions. It is challenging to reconcile the application of modern rules, guidelines and procedures that are mandatory for the operation of NRDI, with aspects of traditional practices. It was evident in this study that community leaders throughout the study regions were operating without proper understanding of the rules and regulations of the NRDI. For example, in
WP, decisions and leadership styles of the executive members of the NRDI are subject to institutional rules and guidelines.

An example of such a case was noted in one of the villages where a traditional leader has been in the leadership position for over 30 years. His role as a leader began as a village councilor during the colonial era, and he has since progressed to the position of Village Planning Committee (VPC) chairman. His leadership style involves largely traditional autocratic ways of making decisions. This had many implications for him as a traditional leader heading a Village Planning Committee. Some of the claims made against his leadership were those relating to unfair sharing of benefits, particularly in terms of directing benefits to his close families and friends. He was also seen as a leader who could not adapt well within a modern and fast changing environment. According to the younger generation leaders in the community, such leaders need to be replaced. The younger generation of leaders claimed that they are capable of assuming current leaders’ roles to deliver benefits that have been lacking under these traditional regimes (pers. com, WP case study village, June 2012). This example demonstrates a clash between traditional values, that hold elders in high esteem, and modern values that place a premium on education and knowledge of modern institutions, characteristics more commonly held by younger generations.

8.3.3 Clashes of value systems between traditional PNG and modern concepts

There are also other clashes between modern and customary value systems. In the PNG context, this is described as trying to be true to one's values and beliefs while working effectively within the modern economic environment to serve the communities. Many respondents in this study expressed dissatisfaction at the clash of values that occur between modern and traditional communities. For example, one respondent stated:

Modern concepts are seen as impediments that induce people from promoting their traditional values and being loyal to their own customs and traditions. What the participants in this study usually experience in their communities is that they have to sacrifice to compromise their traditional values in order to participate in the development process (Author’s Survey data, case study village, July 2011).

As described in Chapter 2.2.3, in the rural PNG context, peoples’ views of leadership are of someone who can provide for others, is a hard worker who is ready and willing to provide assistance to the needy, and a person who has material wealth (e.g., gardens, pigs) who can afford to assist others. Some authors therefore describe PNG leaders as being bigmen and bigshots (e.g. Martin 2013). In these three regions, interviewees’ perceptions of a leader were of someone who can provide
leadership that brings about stability and prosperity in the community. As mentioned earlier in Chapters 2 and 7, 'prosperity' in this context refers to services (schools, health, and communications) and economic opportunities that lead to an overall improvement in the quality of life. 'Stability' refers to the order and respect members can have for one another in maintaining harmonious relationships in a community. In this sense, a leader's measure of performance, as viewed by their followers, is determined by how well they provide these goods and services that add to the overall prosperity and stability to their community. For example, in a traditional leadership context, a clan leader took responsibility for ensuring that every member had equal access to land and other resources belonging to a clan for food production, and for other sustainable livelihood outcomes. Judgments of the quality of the clan leader's decisions are based on the livelihood outcomes of the clan's members.

In the event of major resource developments, it is usually the clan elder who is appointed as leader of the community to represent their views in the development process. In this case, the scope of responsibilities of the clan leader has suddenly increased. His/her judgments and decisions have to be based on a wide range of factors, including economics, markets, business, and benefit sharing. He/she is caught in the dilemma of making decisions for the organisations he represents as well as for day to day needs of his/her immediate relatives. In this regard, the leadership appointment processes in the communities discussed in Chapter 6.7 is made by villagers with such expectations in mind. The expectations of these villagers from their leader in these terms may also spread to extended 'haus-lain' (families and relatives) and communities.

In the PNG context, the vote of an individual member of a family is representative of his/her members. Thus, a leader is expected to provide for all of his/her family members, including their extended relatives. In this sense, the role of a leader and the expectations from him/her may extend beyond the boundaries of their own villages and project sites to other regional and provincial centres. From this perspective, it is clear that leaders face multiple dilemmas in the context of PNG resource development projects. These include the dilemmas of extra responsibilities, of providing to the community and 'haus-lain' goods and services as expected from a resource project opportunity, while at the same time facing the realities of modern economy, politics, and management decisions in managing the affairs of the new resource development institutions. It is also clear from this study that the success and failure of the resource development projects, and the stability and prosperity of these communities, hinges greatly on the decisions that the leaders make under such circumstances.

Another challenge confronting communities is that of clashes of values within and between PNG's many clans, tribes and regions, and between traditional and modernized or hybrid cultures. The study has illustrated how internal conflicts between different tribes and clans, based on their own cultural norms and beliefs, can not only hamper development progress but also cause instability within and between the communities. The fact that PNG is culturally and linguistically diverse means such inter-
and intra-community conflicts are inevitable, and emphasises the importance of effective community leadership in addressing these challenges.

8.3.4 Mitigating risks for resource developers investing in PNG

From an external perspective the clashes between PNG traditional and modern values may pose risks to external investors. However, evidence from this study and others (e.g. Kanowski et al. 2007; 2014) indicate that communities are not opposed to the development of their resources; however, they do want to understand how they will participate in and benefit from the development process. In practice, an important dimension of this understanding means agreeing how the benefits from resource developments would be shared amongst the various tribes and clans. Communities have an established social hierarchy from sub to major clans; traditionally, this means benefits would be shared according to the proportion of land over which each clan has customary rights. It is necessary for developers to appreciate and rearticulate such understandings the communities have, and to ensure a shared understanding between developers and the community. This in turn means articulating communities' traditional thinking and incorporating it into formal developments guidelines. The responsibility of incorporating communities' traditional norms into modern development concepts lies with the Government of PNG, through arrangements such as village-based capacity building and training institutions, adequately resourcing the existing incorporated land groups activities, and supporting literacy programs. However, the capacity of government is limited, and achieving such mutually-acceptable arrangements are mostly likely to be realised when developers work in partnership with both the government and communities to facilitate agreement. As discussed above, this will itself be facilitated by higher levels of education in communities, and greater awareness of modern concepts of leadership and their relations with traditional institutions. This can be further enhanced by incorporating modern concepts of leadership, including principles of accountability and financial transparency, into educational circula.

8.4 Future research options and policy development

While this research has contributed valuable knowledge in addressing some of the concerns relating to modes of leadership in local communities, there are other areas that require further investigations. As noted by Son (2013), a thesis investigation such as this one does not usually provide the final answer, but is one of the many steps to gaining insights to the many factors that come into play in the development context. As such, I foresee five future research priorities that would assist in advancing such an understanding even further.
Firstly, because this case study focuses on three different resource sectors, in three different regions, it is desirable that researchers study multiple projects using both quantitative and qualitative data to extend the findings of this study. In particular, it would be valuable to pursue a multiple case study approach that involved comparison of different but fully operational resource development projects in (1) a single sector across the country, and (2) different sectors in the same region(s) of PNG. This should prove useful in identifying other drivers of community leadership modes, and determinants and constraints of effective leadership development. As noted in similar studies (e.g. Mulung 2012; Son 2013; Liu 2010), such a study involving multiple approaches will broaden the information base provided by the results presented in this study.

Secondly, as I emphasised in Section 8.2, further research is required to examine whether and how community leaders in the regions that have been impacted by natural resource developments could be helped to redevelop, re-establish or invest into traditional institutions and practices to achieve both stability and prosperity. Thirdly, further research is needed to examine how best to prepare communities yet to be impacted by natural resource developments in terms of the opportunities and threats posed by such developments, including developing ideas and practices around leadership that build from traditional structures and enable sound, informed decision-making. Major resource development projects underway in PNG, such as the current Liquefied Natural Gas and other mining projects, offer the opportunity to explore these issues with an emphasis on maintaining community cohesion and building from traditional practices.

Lastly, the sample of respondents in the household survey component of this study (Table 5.1) was heavily biased in all but one case towards men. The exception was a community in a matriarchal society. While it is understood in PNG communities that a husband speaking on behalf of a household will have consulted with his wife, cultural mores generally preclude male researchers from private interviews with female respondents. For this reason, I was not able to solicit the views of women directly in most case study communities. Subsequent research could address this through ensuring participation of women researchers or research assistants in the survey team. This would allow triangulation of the views women may express themselves with those attributed to them by male family members.

8.5 Conclusion

In conclusion, the study suggests that, to deliver both prosperity and stability, in the terms defined here, PNG rural communities need leadership that recognizes the existing livelihood and leadership systems as key components that jointly influence the modes of leadership in communities impacted by natural resource-based development. As demonstrated in this study, the modes of leadership in region
are shaped by the intersection of many factors - the livelihoods assets base, livelihood strategies and outcomes, in, the consumptions and spending behaviours of the communities, a community's vulnerabilities, and the institutional structures and processes. These elements were in turn shaped by the type, form and history of resource development, and the history of co-evolution and hybridisation of traditional and modern institutional arrangements.

Therefore, community leadership in PNG, and elsewhere in a similar resource developing nations, require an integrad approach to link these livelihoods components together in strengthening and improving the leadership modes that are necessary to deliver desired community outcomes. Building positively reinforcing linkages between livelihoods practices, institutional structures and leadership modes is necessary to maintain community stability when financial resources become available from natural resource developments. Enhancing and strengthening the leadership capabilities of communities through education and capacity building programs is essential to achieving better development outcomes.

Community level leadership is fundamental to realizing the opportunities and addressing the challenges faced by rural communities engaging with natural resource developments in PNG; it is also being shaped by those developments. It is necessary to understand the challenges associated with community leadership, and particularly those most relevant to the rural communities, to design policies and other interventions that build and support the capacity of communities to respond to these opportunities and challenges. This, in turn, requires a better understanding of the relationships between modern and traditional modes of leadership in the PNG context, of associated institutional structures and processes and their capacity to adapt to evolving circumstances, and of the implications for policy and resource development interventions.
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Appendix 1: Field Survey Questionnaire

FIELDWORK RESEARCH – FORM 1
SURVEY METHOD: SEMI-STRUCTURED FOCUS GROUPS INTERVIEW QUESTIONS

PART A: BACKGROUND SURVEY INFORMATION

Part A Section 1: Survey Location

Case study community.................. Village.................. LLG.................. District..................
Province.................. Country.................. Date.................. Researcher..................

Part A Section 2: Community Profile

Q1. Number of clans in the community.................. Number of households/family..................
Q2. Number of other groups in the community.................. Population.................. ; Male..................
Female.................. Elders (40+ years).................. Women (26–39).................. Men (26–39)..................
Young (18–25)..................
Q3. What are the main income sources in the community (Rank them from main ones to the least)

Q4. Common language spoken: Indicate with % number of people who speak each of the different
languages. Dialect - Local dialect.................. %, Motu.................. %, Tokpisin.................. %,
English.................. %, Bahasa (Indonesia).................. %, Kuanua (Tolai)..................

PART B: CAPITAL ASSETS

Part B Section 1: Natural Capital:

(a) Land
Q1. Explain briefly the land ownership rights in the community (matrilineal, patrilineal) and how the
land right is inherited. □ Inherited □ Leased □ Bought □ other others (explore)..................
Q2. Do land ownership rights influence/determine the resource development benefits sharing in the
community? □ Yes □ No..................
Q3 Refer to Q 2 if yes, how, in terms of who gets what and what proportions of benefits shared?
Indicate with numbers 1–3 from more to less. □ Clan leaders □ Elders □ Males get higher than
females (Explore) □ Others (Specify)..................
Q4. What is the land user rights in terms of resource-based development benefits distributions/allocations, (e.g., farming, cash cropping) for both land users and landowners? Uses are temporary □ Permanent (Explore).................................................................

Q5. Who decides/makes decisions about the benefits sharing or distributions within the community? Why? □ Clan leaders □ Males □ Females □ Others.................................................................

Q6. Explain briefly the decision-making process regarding issues related to benefits sharing. Are benefits sharing issues dealt with by: clan leaders, communal decision-making or individual? □ Clan leaders only □ All community members.................................................................

Q7. How is benefits shared amongst the members? (e.g., who gets what and by what proportions)? □ Elders gets higher than □ Males gets higher than females members.................................................................

Q8. Can you describe the factors that determine the proportions of benefits sharing? □ Land ownership rights □ Gender where male gets higher than female or vise-versa

Q9. Any other comments/issues regarding benefits sharing/distributions.................................................................

(b) Forests
Q1. What is the importance of forest resources in the community? □ Source of raw materials □ Sources of income.................................................................

Q2. How is forest resource-based development benefits access and distributed amongst the members within the community? □ From developer to clan heads then to members □ From developer direct to individual members.................................................................

Q3. Who decides the allocations/distributions of benefits amongst the family members? □ Clan head □ Other members □ Children.................................................................

Q4. On basis (criteria) are these benefits allocated? □ Ownership rights □ Kinship ties □ Other (Explore).................................................................

Q5. What are common problems with benefits distributions in the household? □ Domestic violence □ Disputes □ social issues (explore).................................................................

(e) Biodiversity
Q1. How can you describe your forest area in terms of plants and animals diversity? □ Rich and diverse □ Scare and limited □ somewhere between.................................................................

Q2. Are they any signs of plants and animal species disappearing in your forest in your area? □ Yes □ No.................................................................

Q3. If Yes, explain what species.................................................................

Q4. Are there any of the native species you are worried about? □ Yes □ No.................................................................

Q5. If yes, what species? Why? ........................................................................
(d) Water
Q1. Is supply of water in this community available at all times? □ Yes □ No ............................
Q2. Where do you obtain water from? □ River □ Well/Bore □ Rain water □ Reservoir
Q3. How far is the nearest water source in the community? □ Less than Km □ More than Km
Q4. Is the water source/supply private or shared? □ Private □ Shared .................................
Q5. If shared how many communities/people rely on this ......................................................
Q6. What are the main uses for water? □ Drinking □ Washing □ Other (specify) .................
Q7. Is the quality of water? □ Improving □ Declining □ Unchanging □ Not sure ...............
Q8. Is your supply of water and quality of water likely to affect your community’s wellbeing?
□ Yes □ No □ Don’t know ........................................................................................................

Part B Section 2: Financial capital:

Q1. Refer to the table below and fill out the details of the business activities (income sources) that you and the family are involve with.

Q2. Is cash income important to this community? Please give a ☑ (tick) in one of the following according to your preference. □ Very important □ Not important □ Of some importance □ Important □ Critical important

Q3. What are/were some of the items that money (income) is spent on a yearly basis?

<table>
<thead>
<tr>
<th>Item</th>
<th>Daily</th>
<th>Weekly</th>
<th>Fortnightly</th>
<th>Monthly</th>
<th>Yearly</th>
<th>Ave. Amt Spent (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clothing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Assets (e.g. house, car etc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Bride Price</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funeral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q4. Who is/are key/person/s responsible for cash income coming into your community? Circle one of the following. □ Clan leaders/community leaders □ Government □ Others [specify]
Part B Section 3: Human capital:

(a) Availability of community labour
Q1. What are the main labour types in the community? Please tick the following

(b) Available labour in the community

<table>
<thead>
<tr>
<th>Labour activities</th>
<th>Number (%)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of readily available persons in the community for cash cropping activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of readily available persons in the community for subsistence farming.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of readily available persons in the community for scale development activities.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q1. Type of labour used for cash cropping activities. Indicate your choices with circles. □ Use community labour only □ Require labour support from neighbouring community members □ Use hired labour only □ Use community labour supplemented by hired labour.

Q2. What are the main labour-demanding activities and their timing throughout the year for main cash crops and other farm activities?
<table>
<thead>
<tr>
<th>Activity</th>
<th>Timing (months/years)</th>
<th>Labour input</th>
<th>Source of labour for the activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of persons</td>
<td>Hours/persons/ha</td>
</tr>
<tr>
<td>Subsistence farming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash crop farming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art and crafts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talents (Songs, dances)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsistence farming</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q3. Are community members compensated for their labour inputs? ☐ Yes ☐ No

Q4. If yes, how are they being compensated for their labour contribution by those who hired them? ☐Cash ☐Kind ☐others (explore) ..............................................................

Q5. What is the rate for labour hired? Rate/day ..............................................................

Q6. What are some of the problems encountered in terms of labour arrangements at the community level? ☐Disagreement of rates being paid ☐Conflicts ☐Others (Explore) ...........................

(c) Access to health facilities and services

Q1. What are basic health services that your family have access to. Complete the table by filling in the details in the appropriate columns

<table>
<thead>
<tr>
<th>Type</th>
<th>Ownership (Private/Gov't)</th>
<th>Distance to and from health facility. How long it takes to reach these services?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health centre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub Health Centre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aid Post</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q2. What can you say about the general health condition of your family members in the household in the last 12 months? (Please ☑ one answer.) ☐ Has improved ☐ Remained stable ☐ Very unstable ☐ Deteriorating

Q3. What do you think are some of the causes to the above? ☐ Excellent accessibility and availability of services ☐ Good accessibility and availability of services ☐ Poor accessibility and availability of the services ☐ Unavailability and accessibility of the services

(d) Access to water and Sanitation facilities
Q1. Which of the following water source is available to your family? Please fill out the details in the table accordingly.

<table>
<thead>
<tr>
<th>Water sources</th>
<th>☑</th>
<th>Distance to water source from village</th>
<th>User (communal/individual)</th>
<th>Status (damaged/contaminated/leaking)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water well</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bore well</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creek/stream</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piped water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windmill</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q2. Is the main source of water available all year round? ☐ Yes ☐ No

Q3. What is the common sanitation (toilet) facility used by your community? Please tick the one that is commonly used by the community. ☐ Flush Toilet ☐ Traditional pit latrine ☐ Improve pit latrine ☐ Bush/water (no facility)

Q4. What are some of the problems/risks you encounter in terms of water and sanitation services? ☐ People’s ignorance to build these facilities ☐ Lack of technical advices and skills ☐ Diseases (explore)

(e) Adaption of technology and relevant information
Q1. Are new technologies and relevant information important to your community’s livelihood? ☐ Yes ☐ No
Q2. If yes, where do you source this information from? ☐ Internally within the community ☐ Externally

Q3. Are these sources accessible to all community members regardless of gender, origin membership, association, religion etc.? ☐ Yes ☐ No

Q4. Is there tradition of innovation among local people in regard to resource use and sharing? ☐ Yes ☐ No [If yes, How?............................................................................................................................................

Q5. Are the technologies that you use based on traditional knowledge, or do they come from external sources? ☐ Traditional ☐ External ☐ Both. Can you explain?........................................................................................................................................................................

Q6. What sources do you use to obtain information about benefits sharing amongst the community members................................................................................................................................................................................................

Q7. What types of information do you seek? ☐ Technical advice ☐ Market requirement and prices ☐ Others

Q8. Do you have difficulties in accessing this information? ☐ Yes ☐ No

Q9. If yes, how often ☐ Always ☐ Rarely ☐ Sometimes

Q10. What are the main constraints?........................................................................................................................................................................................................

Q11. Have community members been exposed to/attained specific skills and training on how to make informed decisions in regard to sharing resource development benefits? ☐ Yes ☐ No [If yes when .............. Where ...................... Who ............................................................]

Q12. Have you applied these skills when making decision about sharing the benefits? ☐ Yes ☐ No. If no what made it difficult?....................................................................................................................................................................................................

Q13. Have you shared the skills and knowledge that they gained with others? ☐ Yes ☐ No.

Q14. In terms of adoption and application of skills and knowledge, what methods do you prefer? ☐ Newspaper and magazines, ☐ Radio programs, ☐ Meetings with other stakeholders ☐ TV programs ☐ Onsite training by experts ☐ Others (specify).

(f) Access to education facilities and services
Q1. What education institutions are available in this community? Fill out the table below.

Q2. School leaver information: How many students graduated from the following grades at the end of last year? Please complete the table below.
<table>
<thead>
<tr>
<th>Grade</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Distance to and from education facility.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Six</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Eight</td>
<td></td>
<td></td>
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<tr>
<td>Grade Ten</td>
<td></td>
<td></td>
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<tr>
<td>Grade Twelve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q3. Of the total number of student graduated, how many of them received offers to continue on to higher grades or institutions.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number receiving offers</th>
<th>Destination/Institutions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Six</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Eight</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Grade Ten</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Twelve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q4. What are some of the problems encountered in terms of education services and facilities? ☐ Poor accessibility ☐ unavailability of the services ☐ Parent’s ignorance to educate children ☐ People’s ignorance of looking after educational facilities ☐ Lack of funds to send children to schools (explore)

Part B Section 4: Social Capital

Q1. What are the main social groups/institutions in this community? (E.g., clan groups, incorporated land groups, Business groups, religious groups, women’s groups, youth groups, sports clubs, government agents, etc.)

Q2. Are they all these groups functional? Y/N? Why? When were they established?
Q3. What are their characteristics and nature of linkages/relationships with you in the community?

Q4. How can you describe your connection with these groups? [e.g., corporative, trusting, variable/uncertainty/confrontation/untrusting]

Q5. Does your association with these groups require obligations such as assisting each other in times of labour shortages or when there are problems? Y/N How?

Q6. How do you communicate with other group members?

Q7. How would you rate the importance to your community’s livelihood each group to which you belong using a scale of 1 – 5 where 1 is very low and 5 is very high; and what is the main value gained from association with each group.

<table>
<thead>
<tr>
<th>Group</th>
<th>Rank the importance of each group to community</th>
<th>Main value gained from the group associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorporated land groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women’s group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious groups</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q8. Who is responsible for facilitating these social institutions and networking in the community?

PART B Section 5: Physical: (Transport and Communication)

(a) Transport
Q1. Indicate the mode of transport that is commonly used by the community. Place a tick next to the most common mode. □Air □Land/Road □ Water/Sea

Q2. Fill out the table below according to the types of transportation mode used by the community.

Air transport

Sea/Water transport

Q3. In the accessibility column indicate how often the transport mode is used to travel to the respective destinations by choosing one of the following: (a) Always, (b) Often, (c) Sometimes (d) Not at all
Land/Road transport

(b) Communication

Q1. Refer to the table and identify different modes of communication systems being used in the community.

<table>
<thead>
<tr>
<th>Communication mode</th>
<th>Availability (Yes/No)</th>
<th>No. available in the community</th>
<th>Ownership</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satellite phones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land lines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral/Word of mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written/letters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHF Radios</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q2. What is the most common communication facility used in the community?

Q3. How effective is this communication facility? Select one only. □ Excellent □ Very good □ Good □ Poor □ Very poor

Q4. Do these (physical) conditions contribute to type of your decision-choices in distributing community benefits in the community? How?

Q5. How/who is responsible for facilitating transport and communication services in your community?

Q6. What are some of the common problems associated with transport and communication services for the community?

PART C: COMMUNITY ORGANISATIONS AND PROCESSES

Part C Section 1: Community Organisations:

Q1. Are there any forms of religious groupings in this community? Name them, and when were they established?

Q2. Are there any business organisation registered in your community? Name them; and are they functional?

Q3. Are there any groupings in the community which the community members are part of? State them.

Q4. Are there any groupings in this community which they are not part of it? Why?
Q5. Are you member of any community, business, religious or social groups in the community? State them...........................................................................................................................................................

Q6. Are there any groupings in this community which you are not part of it? State them?......................

Q7. Give reasons for q6, 5, 4 & 3..............................................................................................................

Q8. Are there any incorporated land groups or landowner associations/companies in the community?

Q 9. What are the functions of these associations/ILGs in this community?.................................

Q10. When and how were these organisations established? Are these organisations functional?.................................................................................................................................

Q11. Are there any other organisations in the community? Name them. Why were they established?........................................................................................................................................

**Part C Section 2: Leadership systems**

Q1. What is the main form of leadership systems in this community? □ Customary □ Modern □ Mixture of both........................................................................................................................................

Q2. How are leaders appointed? □ By Voting □ By seniority □ By wealth □ Other

Q.3 What qualifications of criteria should a leader have or meet? Why?...........................................

Q4. Is there any flexibility for appointing any other members (who are not indigenous persons) of this community to take up leadership roles? □ Yes □ No

Q5. If yes, why?........................................................................................................................................

Q6. In your opinion have the styles and behaviours of leaders changed over the years? ..........

**Part C Section 3: Community decision-making processes for distribution of benefits**

Q1. What are the institutional requirements and protocols of decision making-processes? Who initiates and sets agenda? Why?......................................................................................................................
Q2. When is (are) the most appropriate time/s (morning/midday/evening) for the convening community meetings, why?............................................................................................................................................

Q3. Where are the meetings held for community decisions? (Indoor, open places, village, urban places etc.). Why?............................................................................................................................................

Q4. What level of discussion is acceptable or allowed in these processes? (Considering different groups of people/clans that consist the community).................................................................................................................

Q5. Are there issues of not taking into account concerns and grievances raised by marginalised community members (especially land-users? If so, how are they being addressed?.........................................................................................

Q6. Are/were there any consensuses in the community when the decisions are/were made to distribute benefits amongst the community members? If not, why? If yes, how was consensus reached?................

Q7. Were you involved in the decision? How?.................................................................................................................................

Q8. If you were not involved in the decisions, do you think you should have been involved in the decisions? If yes/no, why do you think you should/should not have been?.............................................................................

Q9. Are/were you happy with the outcome of the decisions? If yes/no, why?................................................................................

Q10. What do you understand the decision-making process was?..................................................................................................

Q11. Do you think the decision making process could have been improved? If so, how?................

Q12. Can you recall the previous forums and decision-making processes? If yes, what are the basic differences between before and now?........................................................................................................

Q13. What do you want to maintain and what do you want to exclude from the existing decision-making process?..............................................................................................................................
PART D: COMMUNITY VULNERABILITY CONDITIONS [RISKS AND UNCERTAINTY]

Q1. What major disastrous events (conditions) could limit your daily livelihood outcomes in the community? How often do they occur and what are some of the measures that are undertaken to address these problems? Under the frequency column write either frequent, sometimes, always, rarely, daily weekly, forthrightly monthly etc.

Q2. What is the status of civil, private and government authorities (if established) in the community to response to these situations?

Q3. How do you cope with situations such as flooding, drought, and volcanoes, disease outbreaks, market price collapse etc. in the community?

Q4. Do you deliberately plan to withstand or survive these situations or do you accept them as normal conditions?

Q5. What would be your main hopes and fears for the future?

FIELDWORK RESEARCH FORM 2
SURVEY METHOD—HOUSEHOLDS INTERVIEW QUESTIONNAIRE

PART A: SURVEY LOCATION

Part A Section 1: Survey Location

Case study community.................. Village.................. LLG.................................

District............. Province........ Country........ Date......... Researcher ..............

PART B: HOUSEHOLD PROFILE

Part B: Section 1: Participant Details

Q1: Participant’s Reference Number.................................................................

Q2: Date of Birth (Age)......................................................................................

Q3: Gender (M/F)..............................................................................................

Q4: Tribe/Province of origin.............................................................................

Q5: Marital status (married, divorced, widowed, single) Married, Divorced, widow or single (Circle)

Q6: Qualification level (highest school) Grade................. Year completed..................
Q7: Other training (specify): Trade................. Professional................. Others.................
Q8: Current Occupation.............................................................................................................
Q9: Number of persons in the household.................................................................................
Q10: Number of other members in the household; Male............., Female..........................
Q11: What are the main income sources in household (Rank them from main ones to the least)........................................................................................................................................

PART B: HOUSEHOLD LIVELIHOOD ASSETS

Part B Section 2: Natural Capital

(a) Land
Q1. Who has the ownership right to the land in your family?□ Father □ Mother □ Others
Q2. How is land given or become available to your household?□ Inherited □ Leased □ Rented □ Bought
Q3. Is the land owned/managed independently or in association with other family members within your community as such as? □ Independently □ Cooperatively as part of group □ Both
Q4. Who in your household makes decision to allocate land to your family members? □ Father □ Mother □ Others
Q5. What area of land (portion in %) is owned privately by your family and what area (portion %) by group? □ % Private □ Group %
Q6. What area of land (portion in %) is use for gardening/subsistence purposes? □ % □ % □ %
Q7. What area of land is used for commercial development purposes? □ % □ % □ %
Q8. Is any of your land holding currently under dispute? □ Yes □ No
Q9. If yes, what area of land is under dispute and what is the nature of the dispute? Area.......ha. Nature of dispute........................................................................................................
Q10. How are these disputes settled within your family?.................................

(b) Forests
Q1. Do your family own/have access to forest resources in this area? □ Yes □ No
Q2. If yes, what are the common uses of forests for your household? □ Source of raw materials □ Sources of income □ others
Q3. Refer to q1 If no, how does your family access the forest resources for your household needs? □ By paying □ Customary arrangements □ Others
Part B Section 3: Financial capital

Q1. Refer to the table below and fill out the details of the business activities (income sources) that you and the family are involve with.

<table>
<thead>
<tr>
<th>Business type</th>
<th>Number</th>
<th>Ownership</th>
<th>Ave. income earned Per year (K)</th>
<th>Location</th>
<th>Sustainability Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade store</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piggery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber /ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vanilla /ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocoa /ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffee /ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish farming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property hire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remittances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copra (coconut) /ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betel-nut selling /ha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation /Royalties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large business firms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Q2. Is cash income important to your household? Please give a ☑ (tick) in one of the following according to your preference. ☐ Very important ☑ Not important ☐ Of some importance ☑ Important ☐ Critical important
Q3. Who in your family members are the key contributors of cash earning in the household? □ Father □ Mother □ Children

Q4. How often do your family members earn cash income in the household? □ Daily basis □ Weekly basis □ Fortnightly □ Monthly □ Yearly?

Q5. What are/were some of the items that money (income) is spent on a weekly basis?

<table>
<thead>
<tr>
<th>Item</th>
<th>Daily</th>
<th>Weekly</th>
<th>Fortnightly</th>
<th>Monthly</th>
<th>Yearly</th>
<th>Ave. Amt Spent (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clothing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Assets (e.g. house, car etc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bride Price</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funeral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q6. Are there any issues relating to the household cash flow pattern for daily survival? □ Irregular income □ over spending □ Shortage of essential items (food and clothing)

Part B Section 4: Human capital:

(a) Availability of household labour

Q1. What are the main labour types in the household? Please give a tick in the following

(b) Available labour in the household

<table>
<thead>
<tr>
<th>Labour activities</th>
<th>Number</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of readily available persons in the household for cash cropping activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of readily available persons in the household for subsistence farming.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of readily available persons in the household for scale development activities.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q1. Type of labour used for cash cropping activities. Indicate with circles of your choices. □ Use household labour only, □ Require labour support from other family members, □ Use hired labour only

Q2. What are the main labour-demanding activities and their timing throughout the year for main cash crops and other farm activities?
<table>
<thead>
<tr>
<th>Activity</th>
<th>Timing (months/years)</th>
<th>Labour input</th>
<th>Source of labour for the activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of persons</td>
<td>Hours/persons/ha</td>
<td>Household</td>
</tr>
<tr>
<td>Gardening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpentry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash crop farming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art and crafts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talents (Songs, dances)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off farm activities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q3. Are family members compensated for their labour inputs? ☐Yes ☐No

Q4. If yes, how are they being compensated for their labour contribution by those who hired them? ☐Cash ☐Kind ☐others (explore) .................................................................

Q5. What is the rate for labour hired? Rate/day.................................................................

Q6. What are some of the problems encountered in terms of labour arrangements at the household level? ☐Disagreement of rates being paid ☐Conflicts ☐Others (Explore) ..............................

(c) Access to education facilities and services

Q1. How many school-aged children do you have in your family?..........................................

Q2. How many of them are not attending school?.................................................................

Q3. If any of these children not attending school what are the main reasons?

☐School is too far away ☐Non availability of teachers ☐School is not considered important

☐Cannot afford to meet the school fees ☐Unsafe for children (especially daughter)
Need the child to help with work in the house

Q4. How far is the nearest school from your house?

Q5. What is the common form of transports your children use to get to school?

Q6. How long does it take to get there?

Q7. How much does it cost to get there?

Q8. Who is responsible for financing your child’s education? Parents □ Relatives □ Scholarships □ Other (Specify)

Q9. What are some of the problems encountered in terms of education services and facilities? □ Poor accessibility □ Unavailability of the services □ Parent’s ignorance to educate children □ People’s ignorance of looking after educational facilities □ Lack of funds to send children to schools (explore)

(d) Access to health facilities and services

Q1. What are basic health services that your family have access to? Complete the table by filling in the details in the appropriate columns

<table>
<thead>
<tr>
<th>Type</th>
<th>Ownership (Private/Gov’t)</th>
<th>Nearest location</th>
<th>Distance to and from health facility</th>
<th>How long it takes to reach these services?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub Health Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aid Post</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q2. What can you say about the general health condition of your family members in the household in the last 12 months? (Please □ one answer.) □ Has improve □ Remained stable □ Very unstable □ Deteriorating

Q3. What do you think are some of the causes to the above? □ Excellent accessibility and availability of services □ Good accessibility and availability of services □ Poor accessibility and availability of the services □ Unavailability and accessibility of the services

Q4. State any/common problems that your family encounter in relation to pursuing the necessary health services.
(e) Access to water and Sanitation facilities

Q1. Which of the following water source is available to your family? Please fill out the details in the table accordingly.

<table>
<thead>
<tr>
<th>Water sources</th>
<th>Distance to water source from community</th>
<th>User (communal/individual)</th>
<th>Status (damaged/contaminated/leaking)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water well</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bore well</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creek/stream</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar pump</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piped water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windmill</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q2. Is the main source of water available all year round? □ Yes □ No

Q3. What is the common sanitation (toilet) facility used by your household? Please tick the one that is commonly used by your family. □ Flush Toilet □ Traditional pit latrine □ Improve pit latrine □ Bush/water (no facility)

Q4. What are some of the problems/risks you encounter in terms of water and sanitation services? □ People’s ignorance to build these facilities □ Lack of technical advices and skills □ Diseases (explore)

Q5. How often you require medical services? Number of times/month/year......../month.......year

Q6. What are the main health problems that you encounter in your family?............................

(f) Household diet and consumption pattern

Q1. What are commonly grown and consumed foods in your family? For grown and consumed foods what proportion (%) is required in the household............ For purchased and consumed what proportion % is required in the household.................................................................

Q2. How many meals do you have in a day? □ 1 □ 2 □ 3

Place a □ in the appropriate column to indicate the diet pattern within a week
Q3. Are these foods still being eaten or the situation has changed?

Q4. Is food security a problem for your family?  □ Yes □ No,

Q5. If yes, how do you survive or manage and ensure food is available during this situation? ..........

**Adaption of technology and relevant information**

Q1. Are technologies and relevant information important to your family’s livelihood? □ Yes □ No

Q2. If yes, where do you source this information from? □ Internally □ Externally

Q3. Are these sources accessible to all family members regardless of gender, origin membership, association, religion etc.? □ Yes □ No

Q4. Which sources are most reliable for the household □ Internal □ External

Q5. Is there tradition of innovation among local people in regard to resource use and sharing? □ Yes □ No, If yes, How? ..........................................................

Q6. Are the technologies that you use based on traditional knowledge, or do they come from external sources? □ Traditional □ External. Can you explain? ..........................................................

Q7. What sources do you use to obtain information about benefits sharing amongst your family members? ..........................................................

Q8. What types of information are required from the sources? □ Technical Advice □ Market prices □ others

Q9. Do you have difficulties in accessing this information? □ Yes □ No..................

Q10. If yes, how often □ Always □ Rarely □ Sometimes and what is the main constraints?

Q11. Have you attained specific skills and training on how to make informed decisions in regard to sharing resource development benefits? □ Yes □ No If yes when.............Where........................

Q12. Have you applied these when making decision about sharing the benefits? □ Yes □ No. If no what made it difficult?

Q13. Have you shared your skills and knowledge that you gained with others? □ Yes □ No.

Q14. In terms of adaption and application of skills and knowledge, which methods do you see most appropriate for you? □ Newspaper and magazines, □ Radio programs, □ Meetings with other stakeholders □ TV programs □ Onsite training others (specify).
Part B Section 5: Social Capital:

Q1. Are there forms of social network groups that you and your family are part of? (E.g., clan groups, incorporated land groups, Business groups, religious groups, women’s groups, youth groups, sports clubs, government agents, etc.) If yes, name the ones you are part of. □Yes □No

Q2. Are they all these groups functional? When were they established? □Yes □No

Year ...................

Q3. What are their relationships with you and your family? ..........................................................................................................................

Q4. How can you describe your connection with these groups? [e.g., harmonious, corporative, trusting, variable/uncertainty/ confrontation]............................................................................................................................................

Q5. Does your association with these groups require obligations such as assisting each other in times of labour shortages or when there are problems? Y/N How?..........................................................................................................................

Q6. How do you communicate with other group members? ..........................................................................................................................

Q7. How would you rate the importance of these groups or being part of this network of associations to your household’s livelihood? Rate each group to which you belong using a scale of 1 – 5 where 1 is very low 5 is very high; and what is the main value gain from association with each group.

PART C: HOUSEHOLD DECISION-MAKING PROCESSES

Part C Section 1: Household decision-making processes:

Q1. Do you and your family members conduct meetings to make household decisions? □Yes □No

Q2. How are the decisions within the household being made? □ Individually □ With family consensus ..........................................................................................................................

Q3. Who decides and make decisions for your family? □ Father □ Mother □ Children □ All family members ..........................................................................................................................

Q4. Who is responsible for implementation decisions the decisions? □ Family head and mother □ All family members

Q5. When is (are) the most appropriate time/s for the convening household meetings, why? □ Morning □ Midday □ Evening
Appendix 2: Detail data collection procedures

Actual Procedures used for data collection

The survey techniques involved in collecting the data were based on the procedures used during the pilot study in 2011. During the pilot study period the researcher had established relevant contacts in the community. This has helped the study to conduct interviews without much difficulty. The detail procedures involved for conducting interviews in Western Province are outline below:

(a) Initially a [toksavae], (in PNG-TP) community notice either verbal or written, was sent out through their community leaders and OTFRDP community development officers. A radio broadcast through the local community station was broadcasted informed people about my presence in their community. Confirmation of my visit to their communities usually was conveyed through the community leaders as well as OTFRDP/OTML officers. Mobile phone coverage in the area enabled some of the communities/participants to contact me. This usually took a day or two.

(b) Following this I made physical visits (usually several attempts) to the communities. On my second or third attempt I was able to confirm meeting times and venues. This happened because communities were busy with receiving their royalty payments (from OTML) and had to do bank runs during the week in which I was present. I was usually assisted in logistics by community development officers who were assigned by OTFRDP to work with me in these communities. Although, this raises question of biases the researcher did took the time at the beginning of interviews to explain author’s position in this study as described in Section 5.2.1.

(c) Upon arrival usually on the next day a general meeting was conducted. The meeting served the very important role of telling participants who I was and what I was doing in their community, who I would be working with, where and how long I would be staying in the community. This meeting also offered me the opportunity to make an assessment of and raise questions about any cultural issues that I had not considered in my planning but could be of critical importance to my research as well as the interest of research participants.

(d) After the initial group meetings I asked for volunteers who could make themselves available for in-depth interviews later on. This usually took place during the day at a designated location with minimal presence of other community members. Such interviews were conducted either on the same day after the initial meeting or on the next day.

(e) Since the communities in the pilot case study regions were relatively small communities with a number of hamlets (on average not exceeding 30 houses), most of individuals volunteered to take part in these interviews. This eased the problem of making selections. If
selections had to be made that would have brought the possibility of conflict to the communities as others may see themselves as being overlooked for taking part in such activities.

(f) Selection involved representatives from a number of clans in the community, including men and women, young people and elderly members. This selection was confirmed by community leaders and OTFRDP officers who have knowledge of the community’s clan structures.

(g) In some situations where I came across any member of the community who was not present at the initial group meeting, but wished to talk about his/her leadership experience I also included them as interview participants and many of them were considered in my records as additional participants.

(h) In all communities before conducting the actual interviews I requested consent either from the community leader or the participant to give or sign a consent form agreeing to take part in the interview in the study. All consents were recorded as written documents (see Appendix 12.4).

(i) All interviews involved face to face discussions including conversations, speeches and storytelling. This was guided by the draft guide questions in Appendix 12.3. Supporting questions were also asked to get explanations about things I was unsure.

(j) After each interview a summary of what had been discussed was read back to the participants to confirm whether or not what was written truly his/her/groups’ views and opinions. If further comments needed to be made I continued to work with the concerned participant until we both were satisfied. This happened straight after the interview or on the next day. On average an interview took 45 to 50 minutes.

(k) To conclude, as a gesture of appreciation tea/coffee was provided by the researcher to thank the community for their time and effort in providing assistance.

For East Sepik Province similar procedures were applied as in Western Province except for the following:

(a) There was no radio broadcast to this community;

(b) Accessibility was difficult because of a long walk (4-6hrs walk) to reach the communities. This was normally assisted by community members who volunteered to help in the study communities.

(c) Most of the interviews were conducted in the evenings, nights and in the early mornings where I had to arrive late and spent nights with the host communities. The next morning before travelling to another community morning interviews were conducted for those who were not available for the previous evening’s sessions.
(d) Community/social gatherings (death, bride price, ceremonies and elections meetings) were frequent in the area during the study period. This encouraged the communities to slot me into their programs as they also were keen to learn and hear about my research work in detail. In such situation the impacts would have been both positive and negative responses from the participants. The author takes into account this situation when conducting the major fieldwork.

For East New Britain Province similar procedures were applied as in Western and East Sepik Provinces except for the following:

(a) There was no radio broadcast to this community;

(b) Accessibility was possible because of good road networks linking each community. This was normally assisted by community members who volunteered to help in the study communities.

(c) Most of the interviews in the first two communities were conducted in morning between 10am and 12am after church services where I had to attend church services with the host communities. In the third community interviews were conducted between 9am and 12 am after school’s meeting where I sat in as an observer at their parents and citizens Association (P&CA) meeting. For those who were not available for the interviews sessions I had to return in the next couple of days at the time convenience for them.
Appendix 3: Detail major fieldwork descriptions

The major field work began in East New Britain Province (ENBP), then to East Sepik Province (ESP) and finally Western Province (WP). As I discussed in Chapter 3, an initial community meeting was the first stages of my research as an entry into the community. For example, in East New Britain Province, the Ward Councilors, Joel Puipui (Liaga) and Lucas Otto (Manapki), Joseph Valaun (Nabata) and other senior members of these communities met with me on the 22nd and 26th of April 2012, to talk about the research and the household survey. The three ward members and councilors agreed to my request and formally invited me to visit their communities. As a result, community meetings were conducted on the 27th of April and 7th of May, 2012. This process was followed in the other two regions.

In East New Britain and East Sepik provinces, repeated trips were necessary. The trip to Ok Tedi region out of East Sepik Province was based on communities’ willingness and availability given daily activities, which determined when I was invited to attend. In these situations, I first had to deal with Ok Tedi communities considering their inflexibility around dates due to commitments to other activities. The methods for data collection were drawn from a combination of methodologies involving formal semi-structured community group meetings, household interviews and participant observations. These various approaches enabled a comprehensive data gathering process that provided a greater understanding of factors influencing community leadership approaches and decisions made. This approach also provided a means of validating information across communities as well as providing leads into important areas of enquiry.

The key research participants included resource owners (men, women and youth) landowners, industry representatives (Ok Tedi Mining, Kairak Oil Palm Project and Nungwia-Sengo Agroforestry Project staff) and the state forestry, mining and agriculture officers in each of the case study regions. The fieldwork commenced in East New Britain Province. From late-April to late-May 2012, I spent a week with each of the Liaga, Manapki and Nabata communities in the Gazelle District. During this period I held three community group meetings, individual household interviews with communities (men, women, and youths) and held discussion with various other stakeholders in the community. Discussions were also held with the relevant people from PNG University of Natural Resources and Environment, Officers of the East New Britain Provincial Government, (such as, Provincial Administrators, District Planners, Provincial Forestry and Agriculture Officers and the Mineral Resources Authority representatives in Kokopo).

The second fieldwork stage took place among the Wosera communities in East Sepik Province. From 27th May to 23 June 2012, I spent a week at each of the Ugutagua, Jipakim period, I held three group meetings and individual household interviews with community members (men, women, and youths)
and discussions with other stakeholders in the community. I also held discussions with local church leaders and district public servants, officers of the East Sepik Provincial Government (Provincial and District Planners, Provincial Forestry and Agriculture Officers) in Wewak, and Numamaka communities in the North Wosera Local Level Government area of Wosera-Gawi District. During this

The third fieldwork stage took place in the Ok Tedi area of Western Province. From 31st June to 8th July 2012, the author spent three days each at Bultem and Atemkit communities in the Upper Ok Tedi region, and Bige in the Lower Ok Tedi region in Western Province. During this period I held three group meetings and individual household interviews with communities (men, women, and youths) and discussions with other stakeholders in the community. I also held discussions with Ok Tedi Development Foundation staff, officers of Fly River Provincial Government, (Provincial and District Planners, Provincial Agriculture Officers) and the PNG Forest Authority representatives in Tabubil and Kiunga.

The fourth stage of the fieldwork data collection involved a second trip to Wosera communities in East Sepik Province. This was to attend to remaining household surveys as well as to verify aspects of the data collected previously. This visit took place between 14th July and 20th August 2012, spending at least one week in each of the communities. The fifth stage was a second trip to the East New Britain Province communities. This was to secure necessary information to quantify earlier data collected. This took place between 24th August and 13th October 2012.
Appendix 4: Information Sheet for Participants

Introduction
This sheet provides background information about the pilot study I will be conducting in your community. The study is part of my PhD research project at the Australian National University. My PhD research aims to understand more about how community members feel about benefits and impacts of natural resource-based development in PNG, and how these benefits and impacts are managed by community-level leadership and decision-processes. My research is sponsored by the Australian Council for International Agriculture Research, but it is independent of them and any other interest. My thesis and recommendations will be publicly available.

Research Background and Objective
Leadership at the local community level is an important determinant of the benefits and impacts of resource-based development in PNG. In contemporary PNG society, community leadership also plays a critical role as a link between traditional and modern economies and decision processes. In doing so, it is faced with the challenges of engaging with modern, complex, socio-economic, political and resource management systems and reconciling them with traditional approaches and values. My study is interested in understanding community leadership decision-making processes in this modern context. I am examining how traditional leadership at the community level functions or works for managing natural resources in PNG, how it has changed as the nature of PNG society and how the economies change, and how it might better contribute to sustainable natural resource-based-development in the future.

Research Methods and Participants
I plan to carry out my research by exploring the issues of interest in a number of case study communities in PNG. I am beginning my study by testing my ideas and research methods in a few communities with which I am already familiar. These are communities who are impacted by the Ok Tedi Mine in Western Province, and those who may be impacted by the Forestry (FMA) project in the East Sepik Province. I will use this pilot study to refine my understanding and research approach for later parts of my PhD study.

My main research methods are holding community meetings, to hear the opinions and perspectives of the community as whole, and interviewing a sample of households to understand the perspectives of cross-section of families. My sampling method is designed to give me an understanding of breadth and diversity of opinion. No individual community or community members will be identified when I write up my work.
Consent
You are invited to participate in my research, but there is no obligation to do so. There are no individual benefits for participating, and no sanctions if you choose not to. If you choose to participate, I will ask for your consent orally or in writing.
Appendix 5: Letter of community consent to conduct this research

I/we,.................................................of.................village of............................Province, Papua New Guinea, on behalf of the.........................village community and people consent to,

Mr. Francis Essacu of the Australian National University, Australia in engagement and participation in his research activity, our agreement is restricted to the following areas;

- Allow Mr Essacu or his assistant(s) to conduct a social survey work of community and individual members;
- Allow Mr Essacu to interact with members of the..........................community of..................regions by conducting interviews, making observations, recording and transcribing actions of activities and events that takes place in the communities;
- We consent Mr. Essacu to organise and conduct meetings in the..........................villages and communities relating to his research study; and
- We give access to the..............................communities and other resources for the purpose of his research work.

In return for our gesture of goodwill and consent, whilst conducting his research we expect that Mr. Essacu will take every measures as far as possible to

- Ensure that he will work with our village leaders or appointed members of the community;
- Keep us inform on his progress and daily schedule of activities;
- Provide advice and assistance in areas of his profession and expertise when required; and
- Provide feedback to us after completion of the study on the outcome of his study.

We also anticipate that the project under which he is carrying out his study will facilitate opportunities as benefit for the.............................. communities; we are thankful for such assistance and in that regard, we also give our support and participation in this research.

Name :..............................................................................................[PRINT NAME]
Village.................................................................................................. 
Signature............................................................................................... 
Witness: ..........................................................................................[PRINT NAME]
Signature............................................................................................... 
Signed on this day ...................... of..............................., 2012
Appendix 6: Letter of individual consent to conduct this research

I ...................................................agree to be interviewed by Francis Essacu about my involvement and experiences with community leadership and decision making processes in PNG.

I have read the information sheet and understand that:

• The interview is completely voluntarily which means I can choose not to participate if I wish to,
• The information I provide in this interview will strictly be confidential and used only for the purpose it is intended for and that data will be securely kept by the interviewer.
• The interview is confidential and will not be disadvantaged in any way for the information I provide
• Result of the interview can be made available to me as a form of transcript or summary report and I can make further comments if I wish to.

I also understand that if I have any queries about the research, I can contact Francis Essacu, his Supervisor; Professor Peter Kanowski or ANU Ethics Committee through the following Address;

Francis Essacu,  Professor Peter Kanowski
Fenner School of Environment & Society  Fenner School of Environment & Society
The Australian National University ACT 0200 The Australian National University ACT 0200
T: 02 6125 2667 T: 02 6125 2667
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Email: francis.essacu@anu.edu.au Email: Peter.Kanowski@anu.edu.au

The Secretary Human Research
Ethics Committee Chancery 10B
The Australian National University
ACT 0200 T: 02 6125 2667 F: 02 6125 0746 Email:
Human.Ethics.Officer@anu.edu.au

Name:................................................................................................. [PRINT NAME]

Village.................................................................................................

Signature.............................................................................................

Witness: ............................................................................................ [PRINT NAME]

Signature.............................................................................................

Signed on this day ...................... of................................., 2012