THE IMPACTS OF A MAJOR DEVELOPMENT PROJECT ON WOMEN'S LIVES: A CASE STUDY OF MINING IN LIHIR, PAPUA NEW GUINEA

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DEDICATION

This Dissertation is dedicated to my father, Blasius Bai, and my late mother and uncle, Rita Lagea and Noah, whose love and perseverance in seeing me through my early education I will always cherish, and whose wisdom and guidance I will strive to follow.

ABSTRACT

Most forms of development in the past have followed the mainstream model of development, the 'top down' approach, which assumes that benefits of development will reach the grassroots people through time. This has rarely been the case and many disadvantaged groups of people in local communities, especially women, have become marginalised and suppressed by this approach to development. Thus the concept of empowerment has been adopted by those supporting an alternative development approach emphasising the sharing of power in decision-making and planning, and equitable sharing of the benefits of development.

Nevertheless, many large-scale projects, such as mining, are still going ahead 'in the national interest' with little regard for the interests of local communities. This thesis, acknowledging the complexity of the issue, sets out to assess the case of Lihir, Papua New Guinea, where a large-scale mining development is taking place and the mining company has made public statements about their commitment to ensuring local people benefit from the development. Coming from an empowerment perspective, this thesis asks questions such as whether or not Lihirian women, as traditional landowners, have been involved in the decision-making, planning, and negotiation processes regarding the mining development, and whether they have benefited from the development to date.

The overall finding is that Lihirian women have been marginalised and disempowered by the current mining development. Women have had far fewer opportunities than men to benefit from the improved employment, business, transport and training services provided by the mining development and meanwhile they have had to endure certain burdens such as increased workloads due to absence of husbands, drunkenness of spouses and social decay. The uneven development characterising the Lihir mining development raises important gender issues which deserve greater interest from human geographers.

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LIST OF ABBREVIATIONS

BCL	Bougainville Copper Limited
BDO	Business Development Office
BHP	Broken Hill Pty. Ltd. (Australia)
CMG	Catholic Mama Group
CMP	Chamber of Mining and Petroleum
CRA	Conzinc Riotinto Australia
CRD	Community Relations Office
IBP	Integrated Benefit Package
K	Kina (PNG currency)
LGT	Lihir Gold Times
LMALA	Lihir Mining Area Landowners Association
LMC	Lihir Management Company
MOA	Memorandum of Agreement
MRL	Mineral Resources Lihir
NDA	Nimamar Development Authority
NGO	Non Governmental Organisation
NIP	New Ireland Province
NIPG	New Ireland Provincial Government
PNG	Papua New Guinea
PWA	*Petztoreme* Women's Association
RMU	Resource Mapping Unit
RTZ	Rio Tinto Zinc
TIA	*Tutom me Isokol* Association
UCWFG	United Church Women's Fellowship group
UPNG	University of Papua New Guinea
VSD	Village Services Database

CHAPTER ONE: INTRODUCTION

1.1 Aims and Objectives

Realising the disadvantage position of many women in Third World countries this study seeks to assess the impact of a major development project on women's lives and their involvement in decision-making regarding the project. The chosen project is the gold mine development in Lihir.

The main aims of this thesis are: to identify whether or not Lihirian[1] women have been involved in the decision-making or negotiation process regarding the major mining project which has just started in Lihir; to determine the extent of women's involvement in the current development of the gold mine project; and to identify the existing or potential problems faced by women in association with the mining project. Central to this thesis is the concept of empowerment which can help to determine whether or not Lihirian women's situation will improve with the mining development. It is hoped that the findings of this thesis will help to suggest ways of improving women's participation in mining projects in developing countries.

1.1.1 Rationale of this Study

I am a Papua New Guinean student, from a matrilineal society in West New Britain where women have rights over land and property. For example, land is inherited through the mother's side and children belong to the mother's clan. Women in my society traditionally seemed to have had higher status than women in strong patrilineal societies, especially when dealing with land matters. For instance, my maternal uncles used to consult my maternal grandmother for her views or advice before an important decision over our land was made. However, in recent years this tradition has been fast deteriorating and women, in most cases, are being ignored in major decision-making over the land. I was concerned about this trend and wanted to see if it affected women in other parts of PNG too.

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[1]The indigenous people of Lihir island group, Papua New Guinea.

I chose Lihir Island as my area of study because Lihir is both a matrilineal society and the site of a major gold mine development. A company, Lihir Management Company (LMC) Pty Limited, a wholly owned subsidiary of Rio Tinto Zinc (RTZ), has been given approval to mine the gold deposits on Lihir. This will lead to displacement of some villages and loss of control over traditional resources including the loss of hunting grounds, the loss of land for subsistence agriculture and cash cropping, the loss of water supplies and fishing areas due to pollution of rivers and sea, and noise and dust pollution. I was also aware that socio-cultural change would occur, in part due to the increased disposable income villagers would have from royalties from the mine or income from working for the mining company.

As Lihir is a matrilineal society I was particularly interested in researching the customary practices, status and roles of Lihir women and identifying whether or not they were given the opportunity to participate in the negotiation process, signing of agreements, and decision-making of the gold mine development. I felt it was important to consider how the mining development was impacting on women's lives in the short term and how the mine itself could impact upon women in the long term[2]. In addition, this provided an important opportunity for me to get a first hand picture of activities associated with large scale mining projects and their impact on local communities.

Chapter One of this thesis provides the background context within which mining has occurred on Lihir. This includes the location and physical geography of Lihir Island Group; the people who live on the islands, their culture and lifestyle prior to the current mining development; economic activities; infrastructure; and basic services prior to the mining development. This chapter is particularly important in that the structure of Lihir society needs to be properly explained if we are to understand the situation of the people under the current mining development and if appropriate approaches to development are to be achieved during the life time of the gold mine project.

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[2]I was present in Lihir from March to April 1996, a period of preparation for mining production which included the construction of the plant and many other building facilities. I call this period the gold mine development phase. Later in this report suggestions will be made regarding possible impacts on women once mining progresses, as is planned for late 1997.

1.2 Location And Physical Description of Study Area

Due to the physical isolation and location of the country's internal ethnic diversity and a highly dispersed population, Papua New Guinea (PNG) has experienced an uneven form of development during its short history as an independent nation[3]. The focus of development efforts has been centred around large towns and other large-scale development projects such as plantations and mines. Much of the people, however, still reside in rural areas, being very isolated and poorly served by infrastructure and services such as health and education.

Like many other areas in PNG, Lihir was isolated geographically and thus economically within the country, thus the changes which have ensued since permission for the mining development to commence was given have been particularly dramatic. Currently, the main centre of the mining development on Lihir is focused on the eastern coast of Niolam where all of the known ore deposits of the Lihir project are located. Luise Caldera is the focus of all these developments. This will be examined in detail in Chapter Five.

Lihir island group is located at longitude 152° 38'E and latitude 3° 05'S on a grid map (Figure One). It is situated approximately 50 kilometres north-east of Namatanai, in New Ireland Province (Skalnik, 1988:1). Lihir was formerly administered under Namatanai district, however, since the mining development commenced it became a district on its own, with Potzlaka as its headquarters.

The Lihir island group consists of four islands: Niolam, Mali, Masahet, and Mahur (Figure Two). Niolam is the largest of the four and is currently the centre of the large-scale mining development project. The three smaller islands lie north of Niolam. They are commonly called *Ihot*, meaning stony places (Skalnik, 1988:1).

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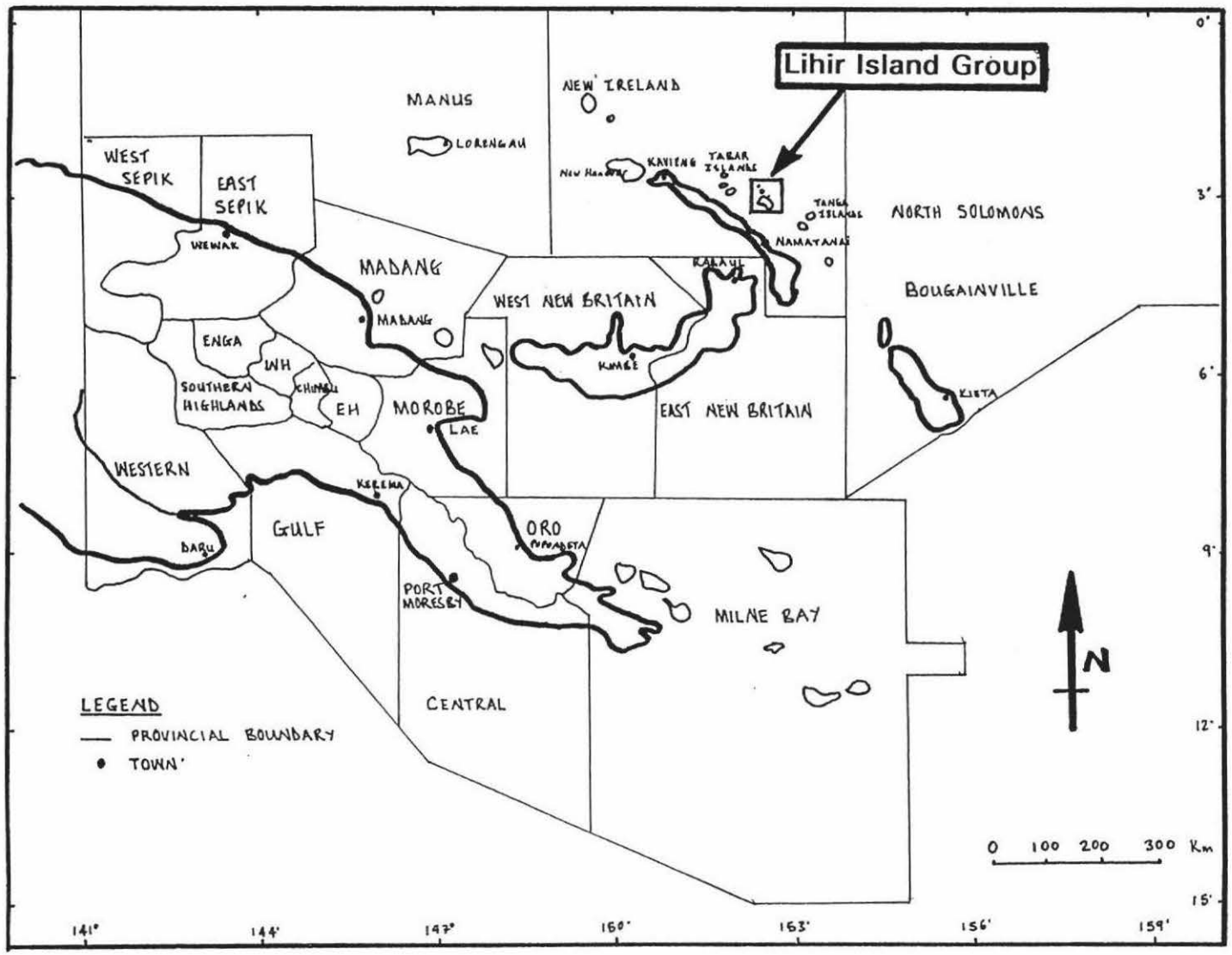
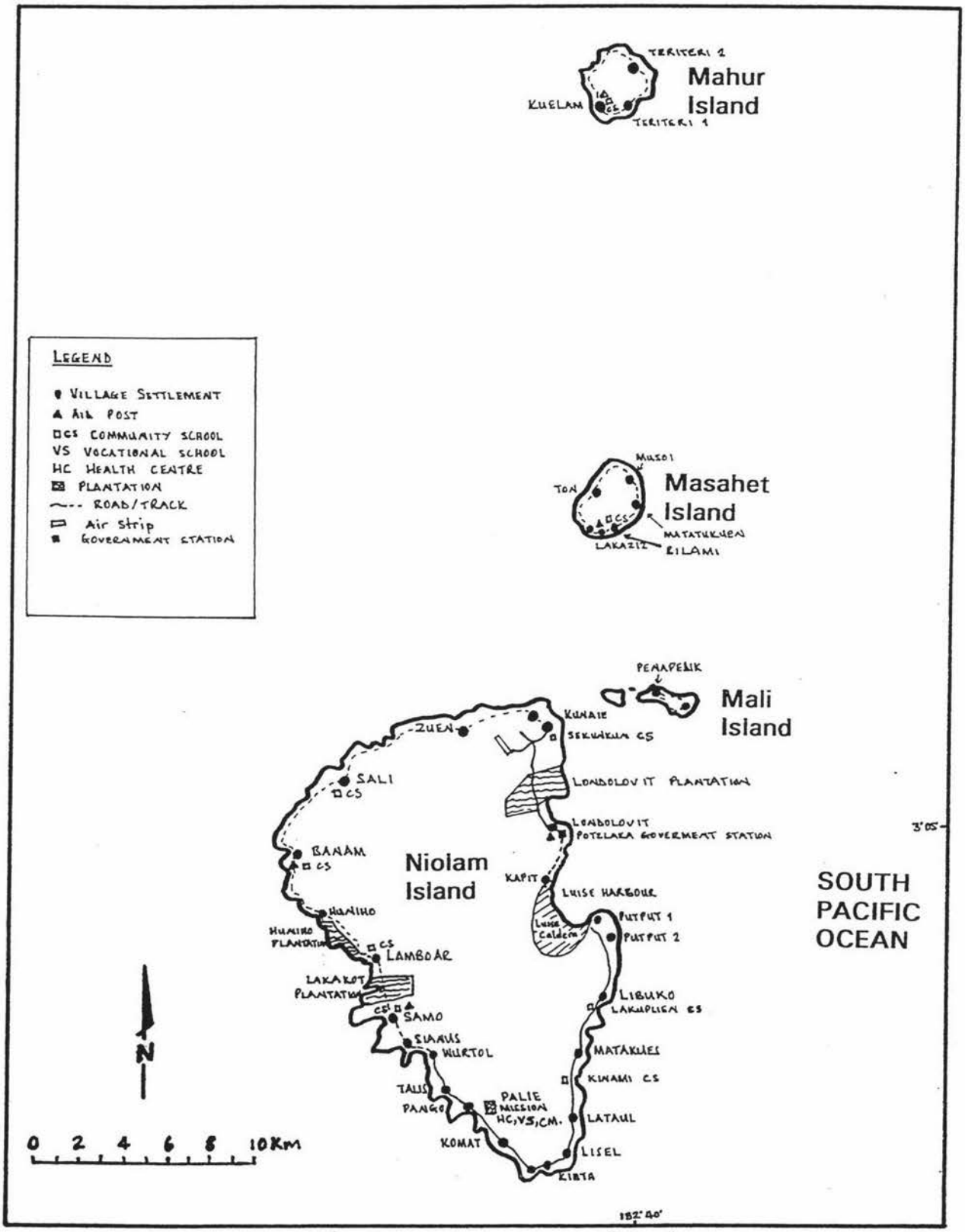
[3]PNG gained independence in 1975 after being ruled by Britain and German colonists from 1884 to 1914 (after World War 1) when Australia took over and ruled to the day of independence (Hunter, 1985).

Figure One: Lihir Island Group in Papua New Guinea



Source: Based on Jackson Rannels; A fact book of modern PNG, 1995.

Figure Two: The Lihir Island Group



Source: Based on Filer and Jackson (1989), and LMC Environment Department, 1993.
NB: This is prior to the commencement of the mining development.

The Lihir islands are raised coral reefs, with associated back reef plains, and volcanic cones and domes. Limestone is the main rock type found here, while alluvial deposits can also be located. Niolam is a volcanic sea mountain which rises steeply from sea level to about 600 metres above sea level (LMC Prospectus, 1995:47). The total land area of Niolam is approximately 205 square kilometres, with Mali, 3 square kilometres, Masahet and Mahur, both 8 square kilometres. Of the total land area of Niolam, 70 percent is still covered with undisturbed medium crowned rain forest. This area is concentrated on the uplands of the island. The remaining coastal land area is either covered by regrowth vegetation, gardens, village settlements or coconut plantations.

1.3 The People and Culture

Like the majority of Papua New Guineans, the people of Lihir are Melanesians. Traditionally, they have some cultural affinity and historical relationships with the peoples of Tanga and Tabar islands, as well as those from villages on the north-eastern shores of central New Ireland (Skalnik 1988:1). Like many islanders in the Pacific, Lihirian men are great travellers and they travel extensively to villages within or outside the island group.

The language spoken in Lihir is *Lir* (Lihir). All Lihir-born persons speak *Lir* as their first language. In addition, *pidgin*[4] is a common language and is spoken by most Lihirians. The 1995/96 population of Lihir is approximately 8,140, with 53 percent being males and 47 percent females (New Ireland Province Village Services Database, 1996). Approximately 72 percent of the people live on the main island.

Culture is a strong influential factor in the contemporary social and political setting of Lihir society. Lihirians are very attached to their cultural values and strictly observe them. Furthermore, cultural ideologies, beliefs and practices are incorporated into Lihir laws, which are influential in creating the

[4]A language derived mainly from English which is commonly spoken by Papua New Guineans. There are more than 700 traditional languages in PNG so Pidgin enables people from different areas to communicate with each other.

kind of society they live in. *Kastom* is also very influential in shaping the system of land tenure, the village structure, leadership and power, roles and status, oral tradition and religion, and the lifestyle of Lihirians.

1.3.1 Land Tenure and Ownership

As in many other societies in PNG, land is the most important asset for the people of Lihir. Their lives begin on the land where they are born, they dwell on it, and even if they move away, they are buried on their *tumbawin* (clan) land when they die. It is also from the land that they get their food supplies and many other natural resources necessary for their life and survival. As an elderly man described to me, "Land is life and life is land. Without land a person is nobody". Thus, Lihirians have a very high regard for their land and likewise are very protective over it.

In Lihir society there is no individual ownership of land. Land is communally owned by the *tumbawin*. Furthermore, because Lihir is a matrilineal society land and property is owned and passed through the maternal line. Therefore, children belong to the mother's *tumbawin* and own land belonging to the mother's *tumbawin*. They have the right to use the land, for example, they may be allocated a block of land for subsistence agricultural purposes, but they cannot claim individual ownership to it.

Traditionally, gardening and other subsistence activities are carried out on *tumbawin* land. This practice also applies to permanent structures like village settlements and *hausboi* sites. Furthermore, tradition also allows for persons other than *tumbawin* members to use land belonging to another *tumbawin* for temporary activities such as hunting, gathering and gardening. However, special permission is always sought from *tumbawin* owners of the land before use. In addition, there is also a unique system which allows for the transfer of landrights from one person to another regardless of what *tumbawin* he or she belongs to (Filer and Jackson, 1989:48). Although this is generally not encouraged it has been part of tradition. Such a practice only happens in special situations when

a person performs *kastom wok*[5] for another. For example, a son can inherit his father's land rights when he performs *kastom wok* for him. As a reward the father, with common agreement from his male *tumbawin* members, will transfer his landright to his son before he dies. When this happens, the son is recognised in the traditional legal system as a landowner for land belonging to his father's *tumbawin* as well as his own *tumbawin*. Thus, this particular system of land ownership is contradictory to the common system of matrilineal *tumbawin* ownership. A disturbing factor is that non Lihirians are taking advantage of this practice today and are alienating land from Lihirian people.

1.3.2 Village Structure

Significant features characterising a typical Lihir village include the following: a shoreline village site, a number of hamlets, a *hausboi* for each hamlet, a stone wall surrounding the village and around the *hausboi*, burial grounds for the dead, a place of worship in the centre of the village, and an opening space along the village centre separating houses. Villages are built in a linear pattern along the shoreline (Photos 1 & 2).

Culturally, people are organised in kinship or *tumbawin* groups, descending from a common ancestor. A village in traditional Lihir is made up of a number of hamlets, which typically belong to a particular lineage (Filer and Jackson, 1989:60). Current village settlements are much bigger than in the past, with more hamlets and *tumbawin* groups. This is partly because of Lihir's annually growing population as well as because of the churches', the colonial and present government administration's efforts in bringing efficient services to the rural people. This exercise has created fewer but bigger village settlements. This also meant that villages were sometimes relocated to accessible areas where basic services could be reached easily. An example can be seen at Palie when the Catholic church established itself there and built a vocational and community school, a church and a health centre. Komat, Pango and Talis villages have since been categorised under one big village, Palie (Figure Two).

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[5]This is the practice of doing favourable work for a relative or someone in need without being asked. For example, a person may contribute a number of pigs for a feast without asking for any form of payment or a return of favour.

Photo 1: Typical Lihir village. All villages are situated along the coastline.

Photo 2: All villages in Lihir are surrounded by a metre high stone wall. The stone wall represents the boundary of a village.

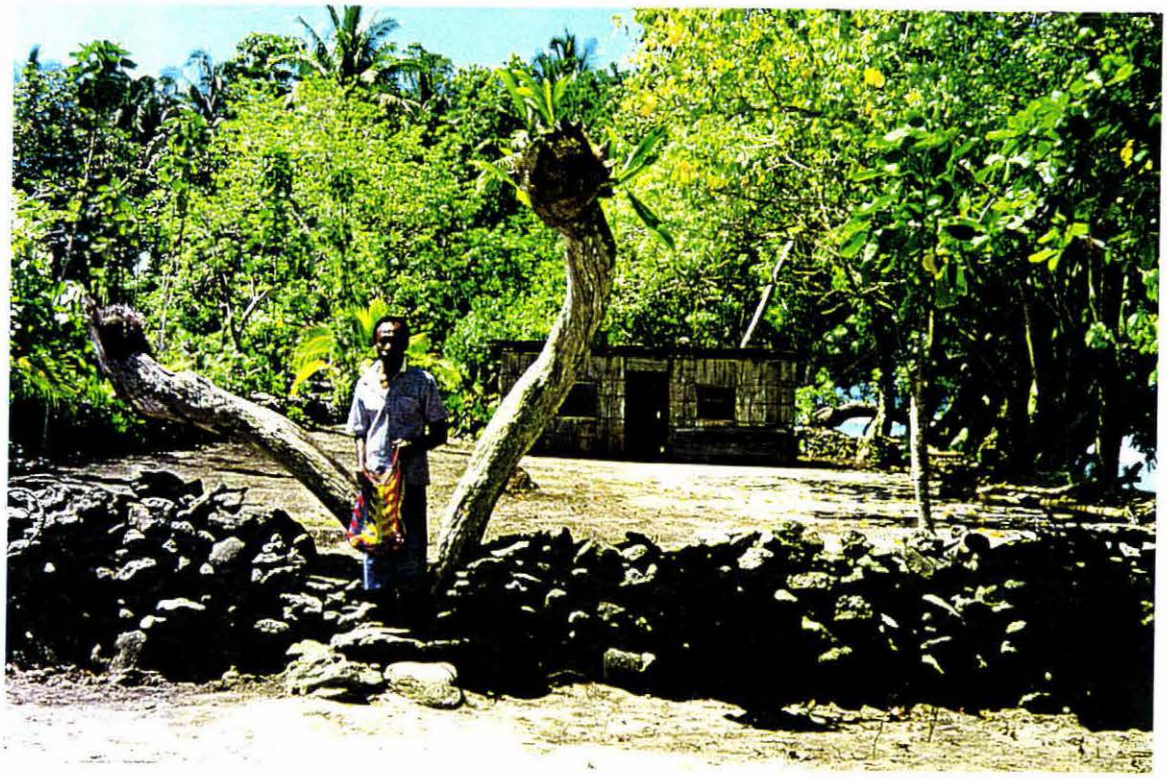

Photo 3: A typical *hausboi* premises in a Lihir village. *Hausbois* are usually surrounded with a metre high stone wall and only men them.

Villages in Lihir are surrounded by a metre stone wall that is build around the village (Photo 2). Within these villages, there are a number of *hausbois* which are also surrounded by a stone wall (Photo 3). It is a cultural practice that only men dwell and eat in the *hausboi* while women and children live and eat in the family house. Women are only allowed to enter the *hausboi* if they are clan relatives and are serving food for men. The system of *hausboi* plays a significant role in upholding the cultural identity and authority of men in Lihir society. It visually identifies the segregation of responsibilities between men and women in the society.

Traditionally, the stone wall that surrounds each village identifies a political boundary between each village. A village may consist of more than one *tumbawin* group. The *tumbawin* groups in a village may claim to be related in some ways to *tumbawins* in other villages, for example, through common

ancestors, intermarriage, or as allies during tribal wars. They may relate to each other as *wanpisins*[6]. These *wanpisin tumbawins* from each villages are traditionally related and very supportive of each other. The bond between them is strong and regarded as sacred, therefore, their sons and daughters cannot be allowed to enter into marriage relationships. In addition, Ramstad (n.d.:1) noted that Lihir *tumbawins* are known to have consisted of big *tumbawins (bikpisin)* and small *tumbawins (smolpisin or subclans)* and members of any *tumbawin* can be found in several villages on the island.

1.3.3 Leadership and Power

In Lihir society, power and leadership occur at different levels. These begin with power and leadership in the household, the *tumbawin*, and the village level. In addition, there is also a different category of power and leadership which exists in the sex hierarchy.

In each village, *kastom* is the law and it shapes the political organisation of the people. *Kastom* places men as overall leaders and decision-makers in the household, *tumbawin,* and village. In the household, the husband is the family head and makes decisions for the house. He gives many directions for the wife and children to follow, for example, telling the wife to cook what he wants or deciding for the family whether they should go gardening, fishing or stay at home each day. On the other hand, the wife does most organisation and management work concerning domestic affairs, for example, making children get ready for a meal, deciding whether children need health care, asking the husband to do repair work for the household when needed, or making sure there is regular cleaning work around the house. However, there is very little consultation between husband and wife when it comes to important issues concerning the family, for example, in matters concerning choosing spouses for their children in marriage or a new site for a family house. Most of the time men go ahead and do whatever they think is best for the family without consent from their wives.

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[6]Members of a clan who can identify themselves with the same totem, but have different names in different villages. They refer to each other as *wanpisin*.

Furthermore, at *tumbawin* level the most knowledgeable[7] male elder is chosen as the *tumbawin* leader and makes decisions for, or on behalf of, the *tumbawin*. Women are never considered for *tumbawin* leadership simply because they are women. The *tumbawin* leader and other elderly clansmen make decisions over land and property, even though land is passed through the women's line. As noted by Filer and Jackson (1989:48), "it is men, not women, who effectively control or 'manage' the distribution of land rights". It has been a common practice that men would not bother to seek women's consent for the right to use their land. For example, if someone (person A) in the village performs *kastom wok* for another (person B) and person B wants to return the favour by giving his landright to person A, only the male clansmen are consulted and they make the decision.

In village leadership, again only men are considered for any positions. Leadership at the village level is achieved through personal success such as the accumulation of wealth (pigs and shell money); wisdom and judgement; vast knowledge of culture and *kastom*; hunting and fishing; bravery in fighting against tribal enemies; sorcery; and listening to and making use of older people's advice (Kiapseni, 1976). Qualities such as physical strength, cultural knowledge and men's boldness in making decisions are common factors which can make a man respected as a leader. For instance, during tribal wars of the past the village leader would lead in fighting the enemy. During times of peace, he made overall decisions for the village regarding social issues like major hunting and fishing trips, big feasts, and the settlement of land disputes. The leader is backed by all the *tumbawin* leaders as well as village elders. Together, men dominate decision-making processes and deal with almost all issues concerning their village community.

In terms of gender relations, men in Lihir society possess overall authority over their women. For example, Ramstad (n.d.:2) noted that, "a man has authority over his sister and she will cook for his men's house *(hausboi)* and work on his plantation and for his feasts". If a woman gets married, the husband automatically takes over and makes decisions for their new family. However, Sometimes

[7]One who has extensive knowledge about culture and *tumbawin* history.

the strong bond between blood brothers and sisters can still obligate the young wife to continue to co-operate with her mother and sisters and work for her maternal uncles (Ramstad, n.d.:3).

Generally, women hold little power over major issues in the household, *tumbawin*, or village level. Likewise, they have no power over land matters even though land is passed through the women's line and they have certain ownership rights to land. They generally go along with what their men say and do whatever is asked of them. However, within women's domains there is a slight hierarchy whereby older women have power and control over the younger women. For instance, elderly women can give directions, advice, and supervision to the younger women and make sure they uphold the dignity and pride of women when they execute their roles and duties both as women and as mothers. Elderly women have the power to scold any young women in public if they are found not to be performing their womanly roles. They also traditionally had the power to say 'yes' or 'no' for a young woman to get married. In addition, men sought their advice when it came to choosing the right partner for a young man. In general, however, the older women's powers are very limited and commonly restricted to influence over women alone.

Of all adults in Lihir, young single women have the lowest status in society. These young women are very much controlled by their parents and maternal relatives and they do what is asked of them without question, for example, it was a common practice in the past that most of them would get married to someone chosen by their parents and relatives. However, although this practice is no longer strong relatives still have strong influence over who the daughter will marry. The young women are also the least able to participate in community meetings and the last to enjoy any social event. They are normally relied upon by their mothers to perform a lot of tough domestic work while under their mother's supervision.

Status, in Lihir society, is strongly associated with power and leadership. Without the qualities of leadership, or without access to leadership because of their sex or age, a person cannot accumulate status. Thus, most Lihir women have lower status in the society despite the fact that land is

inherited through the women's line and women have certain rights over land. There are, however, one or two women out of every hundred who are very vocal and who will stand in front of men and talk. However, it takes a bold and very courageous woman to do this. It is typically the elderly women who have this courage. While there are very few of these women, they do have the respect of men. Their bold reputation can earn them a little higher status than other women in the village.

1.3.4 Traditional Roles of Men and Women

As a matrilineal society, Lihirian women are regarded as the backbone of Lihir society. They play an important role in reproduction, household production, and the general wellbeing of the family. In reproduction, they give birth to and raise children who continue the *tumbawin* line. In other words, they maintain the existence of the *tumbawin.* They are also the first to give their children basic information about who their relatives are and what part of the land belongs to their *tumbawin.* This important role has been acknowledged by both elderly men and women. As in many societies in PNG, Lihir women are seen as producers and providers of the society (Awart, 1995:43). Women play an important role in subsistence production and in providing for the immediate wellbeing of their families.

In terms of traditional gender roles, there is a significant difference between tasks performed by men and women (Table One). This has been a traditional practice and as explained by some Lihirian men and women, the current difference in status and roles of men and women in Lihir society is part of a long process of tradition which has been shaped by people's experiences in life. For example, during the days when tribal fights were common, men lead, fought and defended the village and land from tribal enemies. Furthermore, they made all the decisions for the village. This practice has since developed into complex cultural politics which identifies different sets of roles for men and women. For instance, in Lihir *kastom* it is not polite for women to walk or talk in front of men[8].

[8]In Lihir *kastom*, it is considered very rude and disrespectful when a woman walks in front of a group of men without considering their presence. It is considered appropriate for a woman to announce her presence when walking past and with her head low. Other options are to take the route at the back of men.

Therefore, it is a common practice that they take the back seat in all meetings (Photo 4). Likewise, their involvement in discussions over important issues in public is almost non-existent. The only discussions women are very involved in are discussions concerning reproduction, domestic and gardening issues. Men, on the other hand are hardly involved in such issues because they assume these are part of women's roles.

As stated, Lihir men and women play very different roles in their daily work in terms of domestic activities, gardening, hunting, fishing and gathering, handicraft, and cash cropping. As listed in Table One, women's roles in the domestic arena involve all household work and reproductive duties. Women and adolescent girls perform most of the roles in the household such as cooking, cleaning and child-care. Besides domestic duties, women also do subsistence gardening, shallow water fishing, collecting firewood, gathering and collecting wild fruits, and handicraft work. Overall, women spend about 80 percent of their time doing domestic and gardening work (Figure Three). Furthermore, older women teach girls the responsibilities and roles they have as women, and their duties as future mothers (Photo 5).

As identified in Table One, men do much physical work. However, women's work can also be very heavy. Women usually begin their day with preparing breakfast, feeding children, and cleaning the household. In the gardens they start work in the morning and finish late in the afternoon when the sun is about to set. Besides tending their gardens they constantly check on their small children to feed and comfort them when they hear them cry. Unlike men, women's work does not stop in the garden because they have to harvest some crops at the end of the day and carry them home. On top of the load of garden produce, they also carry firewood, banana leaves and their baby while men only carry personal items or firewood for use in the *hausboi* (Photos 5 & 6). At home they cook for the family, wash and feed the children, serve food for the men at the *hausboi*, eat last, do all the cleaning up and finally retire for the day. Likewise, in the morning before their gardening work, they do a lot of domestic work. They also have to make some time for other work relating to hunting, fishing and gathering, handicrafts, festive occasions and cash cropping. Women spend around two

Photo 4: A clan meeting in Kunaie village. Note that women are always sitting at the back of men. Traditionally, it is not polite for them to sit and talk in front of men.

Photo 5: An old woman and granddaughter returning home from the gardens. It is women's role to carry garden vegetables home. Young girls also start learning women's work at an early age.

Table one: Traditional Daily Work Performed by Lihir Men and Women

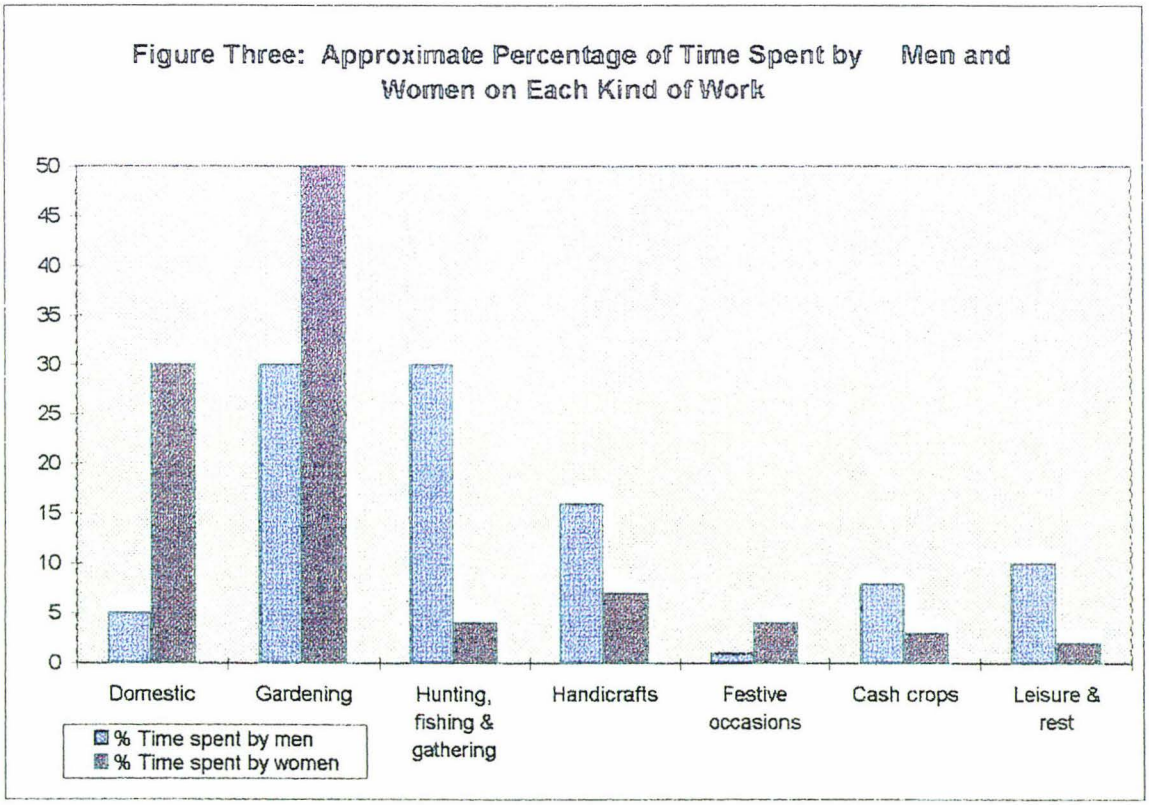
CATEGORY	WOMEN	MEN
Domestic	Responsibility for overall household management and wellbeing: cook daily food; fetch water; sweep and clean around house; feed pigs; bear and rear children; care for the sick; get children ready for school; teach daughters roles and work performed by women.	Collect building materials; build houses; do all repair work (e.g. *sago* roof thatching); maintain pig and village boundary stone wall fence; feed pigs; road and grass cutting work; prepare *mumu*[9] during big feasts; teach boys men's roles; and responsible for major decision-making process.
Subsistence agriculture	Cut undergrowth vegetation; burn and clear dried leaves and branches; plant, rear, and harvest crops; carry harvest home; teach daughters about women's duties in gardens; collect and carry firewood home.	Cut undergrowth and chop big trees; pile and burn bigger tree branches; break soil for yam planting; plant bamboo poles for young yam creepers to grow or climb on; build fence around the garden; teach boys about men's duties in gardens; harvest coconut, betel nut, and fruits from tall trees; and collect wood for fire in the *hausboi*.
Hunting, fishing and gathering	Dig wild fowl and turtle eggs; use bamboo poles and nets to fish in shallow water; collect *kina* shells from river and sea, prawns from river; collect crabs ; collect ripe mangoes, wild yams, *marita, taun, galip* and other fruits/nuts.	Dive for fish on reefs; catch deep sea fish using nets, fishing lines and spears; and hunt wild animals like pigs, possum, big black snakes, wallabies and wild fowl. Birds are also hunted.
Handicraft production	Weave baskets and mats from coconut leaves, *karuka, marita,* and *woiwoi* leaves; make clay pots; and prepare *mis* (shell money).	Weave small baskets from coconut leaves; weave food baskets from rattan; weave nets for fishing; prepare materials for wild pig trap; make spears from *libung* (palm stem); make musical instruments like *garamut, kundu* and bamboo drums, and *tavur* (conch shell); and prepare *mis* (shell money).

Continued.....

[9]Traditional way of cooking food using hot stones. For example, vegetables and pork can be cooked by wrapping them in banana leaves and placing them in the *mumu* and covering them with hot stones for few hours. This method of cooking is commonly used during feasts when there is more food to cook.

Cont'd

Category	Women	Men
Festive occasions	Plant certain crops for a feast; bake tubers in earth oven; harvest and carry vegetables for *mumu*; peel and clean vegetables; collect and prepare *mumu* stones; *mumu* pig meat and vegetables for women and children.	*Mumu* pork in *hausboi* premises during feasts; assist women with their *mumu*; kill and butcher pigs; smoke fish; carry big firewood for *mumu;* and scrape coconuts during feasts.
Cash crops	Help men cut grass and clear around coconut and cocoa plantations; collect dried coconuts and pick ripe cocoa pods; help prepare for drying or smoking.	Mark and clear land for cocoa and coconut plantation; plant and maintain crops; sun-dry or smoke copra and cocoa beans; pack them into bags for shipment; sell dried copra and cocoa at nearest market.



NB: Based on personal observation and interviews with Lihirians

Photo 6: Husband and wife returning home from the garden. Note that the woman is carrying a basket load of food for the family while the husband walks freely and is carrying only personal items.

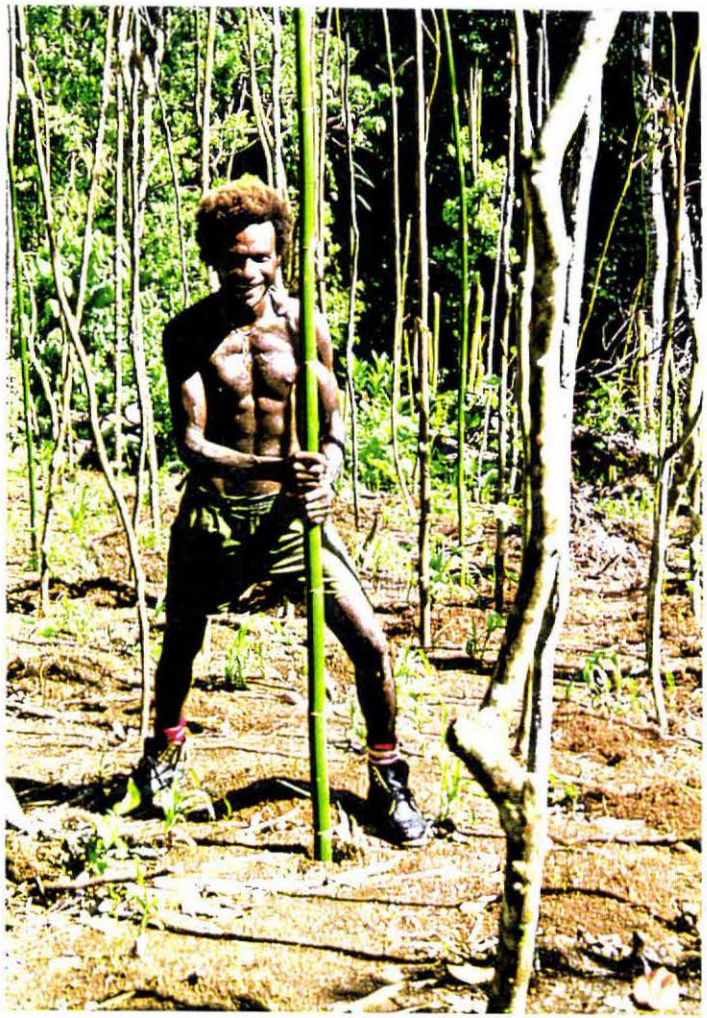


Photo 7: A Lihir man planting bamboo poles for young yam creepers to climb on in a new garden. This is part of men's work.

percent of their time on leisure activities (Figure Three). Their cultural roles in the household meant that they work seven days a week and often only rest when they are asleep. Women show their pride in what they produce from the gardens and what they do at home.

For six days of the week (Monday to Saturday), the daily life of Lihirian men begins with the general preparations of tools or equipment for the day's work (Table One) and ends casually after the evening meal. Men retire to their *hausboi* while women and children to the family house. Men are generally more flexible in their daily work than women, for example, besides gardening they can go hunting, fishing, travelling or cash cropping when they feel like it. Sometimes a man can go fishing all night and spend the next day sleeping. Other times he may just go to the garden and do a little work planting bamboo poles for yam plants to grow on and go back home (Photo 7). Handicraft work can also take up much of men's time. This flexibility is an advantage to men. It is not that easy for women to find time for fishing, hunting and handicrafts because they are more preoccupied with tasks of daily maintenance, including gardening and household duties.

Men spend very little time doing domestic work (Figure Three). They only do domestic work when the need arises, for example, to build a new house when one is needed, or to thatch a roof when rain water leaks from it. Furthermore, they have a lot more free time for rest than women (Figure Three). They spend a lot of time telling stories with other men in the *hausboi*.

1.3.5 Lifestyle Prior to the Mining development

Traditionally, most Lihirians lived a very simple lifestyle based around food production, hunting, fishing and cultural occasions. Their lives prior to the mining development were generally dominated by subsistence forms of living. For instance, they consume mostly produce from their gardens and from what they caught in their fishing and hunting trips. They tended to their gardens almost every day, except for Sundays, when they all went to church for worship. Their gardens were usually cultivated using a mixed cropping system where all crops are planted in one plot (Photo 8).

The daily diet of Lihirians consisted mainly of starchy food such as yam, cassava, and sweet potato. Pork and fish were also consumed by many almost every day. In addition, fruit and nuts such as breadfruit, coconut, *taun and okari*[10] were popular and are consumed during their seasons, or every day in the case of coconut. Also becoming very common in people's daily diets today was store foods such as rice, canned bully beef and fish, tea, coffee, bread and biscuits.

During feasts or deaths, the normal daily activities of men and women, described under the previous section on roles, were indefinitely suspended and people participated in activities relating to the nature of the occasion. People often travelled to other villages and other islands to attend such occasions. Feasts and *sinsing* (cultural celebrations with singing and dancing, accompanied by traditional musical instruments) were a part of Lihir society. In these events a lot of food, especially pork, was distributed and traditional dances were performed (Photo 9). *Kastom* was also sometimes incorporated with Christian church celebrations during special occasions like Christmas, Easter, marriage, and church initiations (Photo 10).

As part of their lifestyle, Lihirians upheld oral traditions very strongly as oral tradition played an important role in passing on *kastom* from one generation to another. As Waiko noted, oral traditions are passed on "by means of legends, stories, songs, cries, chants, accounts of migration history, recitation of genealogies, magical formulae, proverbs and botanical knowledge" (cited in ToVagira, 1990:6). The system of oral tradition has kept alive people's link with their ancestors and their culture. For instance, prior to the introduction of Christianity, the people of Lihir believed in the existence of their ancestors or clan *tandall* (spirits). They believed that a *tandall,* especially the *tandall* of one's father, is always willing to help when sought by its children (Ramstad, n.d.:23). People also believed that the spirits of their dead ancestors can be "contacted through different cults, divinations and sorcery, like *ei suo, madass, mormor, a iniat and buai"* (Skalnik, 1988:16). Such beliefs have been kept alive for generations through the oral tradition and some are still observed today.

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[10]Tropical nuts, usually found along the coastal areas of PNG.

Photo 8: A typical Lihir garden. They practice mixed cropping in a plot of garden which includes crops like yam, *mami,* sweet potato, cassava, banana, pawpaw and sugarcane. Most gardens are fenced for protection against pigs.

Photo 9: Men preparing *mumu* inside the *hausboi* premises while women remain outside. As part of *kastom,* men eat from their own *mumu* during a *hararum* feast (marking an end to the mourning period for a dead relative) while women and children eat from the *mumu* they prepare outside. Men usually eat the best part of pig meat and pig heads are always reserved for them.

Photo 10: A church service in Kunaie village. All Lihirians are Christians and church activities play an important part in their lives.

Photo 11: An old man and his son at their coconut plantation. Like most other Lihirians, their coconut plantation has been abandoned and undergrowth has taken over. Many men abandoned their plantations because they knew the mine would offer them greater financial returns.

Oral traditions are most effectively passed on through the grandfather or father to son relationship and similarly through grandmother and mother to daughter relationship. Tradition and culture was relayed through these relationship during the day when performing or teaching children their respective roles and at night when they talked about the daily work. Children listened and at the same time participated in daily traditional activities. For example, fathers usually took their son(s) with them during their fishing trips and during the process taught them traditional methods of catching fish. As these traditions have practical purposes, children tended to learn quickly and developed a stronger relationship with tradition and *kastom*.

In terms of religion, Christianity has been the main religion on the island group, although some form of *cargo cult*[11] movement still exists in some villages. Christianity was introduced in the early 1900s, with the Roman Catholic missionaries making contact between 1909 and 1910, and the United Methodist Church missionaries in the 1920s (Skalnik, 1988:10-11). These were the two main churches on Lihir and they are still very dominant today. Church work and related activities took up much of people's time prior to the mining development. They attended church services regularly on Sundays and also observed church laws and regulations carefully.

The *cargo cult* movement on Lihir has had a mixture of *cargo cult* and self-reliant development ideology (Skalnik, 1988:18). The movement was inspired by the *Johnson Cult* in the nearby island of New Hanover. It started in 1968 as an association called TIA and later became known by the acronyms TKA, TFA, Nimamar, and recently, as the Lihir Christian Fraternity Movement (Smalley, Filer and Jackson, cited in Skalnik, 1988:18). There are still many followers of the association today and they claim the discovery of gold on the island came as no surprise to them. It has been part of their belief that there will come a time when people will receive ship-loads of cargo and so much money that no one could count. People in this cult group believe that the moment they have been waiting for has arrived and they can now claim their cargo and money from the gold mine.

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[11]A cult movement which has strong beliefs that ship or plane loads of cargo will suddenly appear on their shores and supply them with an endless number of western goods (Skalnik, 1988:18).

1.4 Economic Activities Prior to the Mining Development

According to figures from the Resource Mapping Unit (RMU) of Papua New Guinea's Department of Agriculture and Livestock, the land use potential for Niolam Island is high, particularly along the coast where most of the villages are located. It is most intense from villages beginning with Lamboar, along the south-western coast of the island and further north along the eastern coast, ending at Kunaie village. There are about 24 villages under this area with a total population of 5,269 persons. This area includes the site of the mining development. In addition, people use the land for subsistence farming and other smallholder economic activities such as growing coconuts, cocoa, betel nut, fruit trees and bananas, and raising pigs and poultry.

Cocoa and copra are the main forms of cash crop activity on the island (Table Two). Betel nut, fruit, banana, vegetables, pigs and poultry are not, however, usually sold for cash. These are all raised or cultivated primarily for household consumption.

Table Two: Smallholder Economic Activity on Niolam Island

	Households			Households	
Capitals	No.	% Total	Capitals	No.	% Total
cocoa	223	25	spices	3	4
coffee	1	0	fish	24	67
rubber	4	0	grow other	4	8
oil palm	0	0	pigs	651	86
c'nut/copra	143	80	poultry	49	49
betel nut	118	88	goats	0	0
fruit	50	86	cattle	0	0
banana	72	92	sheep	0	0
vegetable crop	62	80	raise other	1	2

Source: PNG Department of Agriculture and Livestock Resource Mapping Unit, 1990.

Prior to the current mining development, economic activity on Lihir island group was very low and restricted. It was generally very difficult for Lihirians to earn money. The main form of cash income was through the sale of cocoa, copra, and *mis* (shell money). However, not many Lihirians were

involved in such activities. Some Lihirians worked as labourers on the three big coconut plantations owned by the Catholic church and expatriates. The isolation of Lihir from markets and lack of proper transportation service were the main problems faced by Lihirians wishing to sell cash crops. These problems discouraged many Lihirians from getting involved in cash cropping and other such activities. Many have abandoned their coconut plantations and no longer sell copra (Photo 11). The coconuts they have are mainly used for cooking, feeding the pigs and for their daily diets. Furthermore, business opportunities were also very low prior to the mining development. Although a few Lihirians started small businesses like trade stores, their operations were very restricted. This was mainly due to transportation problems in getting regular stock supply.

1.5 Infrastructure and Services Prior to the Mining Development

Prior to the mining development, government services were few and infrastructure development was poor. Although they had an airstrip it was difficult for many Lihirians to travel on planes because they had no money to pay for the fare. Furthermore, planes only came in and out once or twice every week. Similarly, there were no proper road links to villages except through small tracks along the coastline (Figure Two). Most Lihirians travelled on foot and by canoe to other villages on the island. A few had light powered motor boats and used them to travel to other islands, however, most relied on the Catholic church boat, MV Robert, which only travelled when the Parish Priest has business to do outside Lihir.

Health services were also poor in most parts of the island group. For example, even if an aid post was built in a village, a continuous supply of medicine and associated facilities was hard to come by thus health services did not function to the satisfaction of the village people. While there was a larger health centre at Palie, most people found it very difficult to reach (Figure Two).

In terms of education, there were 10 community schools on Lihir island group prior to the mining development that could cater for all Lihirian children. In addition, there was also a vocational school managed and funded by the Catholic church in Palie. However, some children could not enrol for

primary education due to school fee problems. Furthermore, facilities were poor and many Lihirian parents felt their children did not get the required standard of teachers and facilities to be able to learn better. Nevertheless, a few Lihirians proceeded for higher education and had qualifications as teachers, nurses, doctors, pilots and other good careers. A small number came back to work in Lihir.

1.6 Summary

Within PNG, Lihir is particularly isolated and had very little economic activity prior to the mining development. The geographic location of the Lihir island group made it very difficult for Lihirians to get involved in economic activities like cash cropping and small scale business projects. Lihirians lived subsistence lives and traditional *kastom* played a very influential role in their lives.

Although land is passed through the women's line and children belong to the mother's *tumbawin, kastom* does not allow women to make decisions over land. *Kastom* also goes further in terms of shaping the roles and status of Lihir men and women. With little or no power over decision-making, women have very low status compared to men. Furthermore, most of the roles they perform are characterised as those of a subservient type.

The lifestyle of Lihirians is now going through rapid change due to the discovery of large gold deposits on Niolam island. The development of the gold mine project has had significant social and will continue to have economic impacts on Lihirians. The impacts of this change are likely to be different for men and women as the following chapters will discuss.

1.7 Structure of Thesis

There are seven chapters to this thesis and each of them contribute to developing an understanding of the dramatic impacts of the gold mine on Lihirians and in particular on women. Chapter Two focuses generally on the impacts of large-scale mining developments on indigenous people of developing countries such as PNG. The aim of this chapter is to specifically highlight the benefits

received by indigenous peoples and the negative impacts caused to them as a result of mining development. The discussion also includes impacts of mining on women. Because the main part of this thesis will discuss the Lihir gold mine development, a brief description about the scale of and rationale for mining in PNG will be highlighted.

Chapter Three will discuss the roles of women of developing countries and show how they are often disadvantaged by development efforts. The concept of empowerment is introduced which suggests constructive measures for women's development. Empowerment is an important approach which can alleviate problems which constrain women and other disadvantaged groups of people from sharing in the benefits of development.

Chapter Four covers the methods and techniques which I used to obtain information for this thesis, including my time frame and recording mechanisms for data collection, how the research went into practice, which techniques proved to be most effective, and what I learned from the research process.

Chapters Five to Seven provide the main focus of this thesis as they contain discussions on Lihirian women and their position in the current mining development on Lihir island. Chapter Five will particularly describe women's participation in decision-making about the mining development and the major constraints affecting their participation. Chapter Six is concerned with the impacts of the mining development with particular emphasis on the involvement of women in aspects of the mining development and whether or not there is an equitable share of benefits being received by men and women. This chapter will also include the general opinions of Lihirians about the mining development. Chapter Seven contains my analysis about Lihirian women's empowerment or disempowerment while at the same time highlighting problem areas which continue to constrain them from better participation in the mining development. The general conclusion will also be included in Chapter Seven.

CHAPTER TWO: MINING IN DEVELOPING COUNTRIES: RATIONALE AND IMPACTS ON THE PEOPLE

2.1 The Lure of Mining to Developing Countries

Mining is an important industry to many developing countries in the world. To most of their governments minerals like gold, copper, nickel, phosphate and oil mean there will be more investment in their country, greater earnings of foreign exchange and a likely improvement in the country's economic standard. Mining receives high priority on the national development agenda for most developing countries which have significant quantities of minerals (Connell and Howitt, 1991:2). Many of these countries have faced problems of large trade deficits, rising national debts and heavy aid dependence which have placed them in positions where they dare not hesitate to bring investors into the country to extract their rich mineral wealth as soon as it is discovered (Emberson-Bain, 1994:91). For those indebted countries undergoing IMF and World Bank sponsored structural adjustment programmes, great pressure is put on them to decrease spending and increase earnings from exports. Most governments of these countries see the development of their mineral resources as a way of solving most of their economic problems and financing their development efforts.

Mineral resources provide a major percentage of all exports and foreign exchange earned for a number of developing countries (Emberson-Bain, 1994:91). An example was seen in PNG in 1987 where more than 60 percent of the country's export earnings came directly from the mining industry (Jackson, 1991:19). In the same trend, New Caledonia had 90 percent of its export earnings generated from nickel resources in 1970 (Emberson-Bain, 1994:11; Howard, 1988:92). Many other developing countries like Zambia, Zaire, Bolivia, Peru, and Chile in 1994 gained 40 percent of their earnings from mineral exports (Warhurst, 1994:9). Others like Zimbabwe, Botswana, Columbia, Venezuela and to a lesser extent Brazil, rely substantially on mineral production for their GNP (Warhurst, 1994:9).

However, like all other major resource development projects, mining projects cause extensive social and environmental disruption to local areas. Mining projects have costs as well as benefits. As identified by Hughes and Sullivan (1992:1), the brunt of such negative impacts is invariably felt most by the local communities whose land was alienated and whose traditional resources were destroyed or degraded, while the benefits are spread more widely throughout the country and internationally.

Because this thesis will later use as its case study Lihir, a society in PNG where the indigenous people are the resource owners, this chapter will focus the impacts of mining development experienced by indigenous peoples of PNG and some other developing countries. The discussion will provide background information on the impacts of mining projects and will provide the broader context within which my findings on the impacts currently faced by Lihirians in the process of developing the new mining project on their island can be understood. Particular discussion will be focused on the impacts on women living within the boundaries of mining project areas. Firstly, however, I examine why mining is of interest to human geographers.

2.2 Why is Mining of Interest to Human Geographers?

Geography is the study of people in relation to their environment (Robinson, 1976:1). More specifically, human geographers are "concerned with the spatial differentiation and organisation of human activity and with human use of the physical environment" (Johnston, Gregory and Smith, 1994:259). The importance of human geography is that it has relevance to human activities. In terms of mining developments, human geographers are concerned with how changes to the physical environment (for example, land, water, forests and animals) affect local people. They are also concerned with the uneven form of development taking place and inequality in the distribution of resources, power, wealth and benefits. Because of the uneven nature of the distribution of minerals around the globe, extraction of these on a large scale leads to uneven spatial development, for example, infrastructure focused on one place, which affects social and economic development in nearby areas.

Not surprisingly, therefore, there are many human geographers who have done research concerning mining developments, their impacts on people and problems associated with them. A few who have published materials on mining issues will be discussed below. Michael C. Howard (1988), has written about the impacts of the international mining industry on native peoples. Glen Banks (1993; 1996), has studied issues of mining in PNG, including mining multinationals and developing countries, and problematic issues regarding compensation at the Pogera gold mine. John Connell (1991, 1996), has examined compensation and conflict with regard to the Bougainville copper mine. Philip Hirsch (1996), has written extensively on rural development and environment in South-East Asia, including resource management issues. Richard Howitt (1991, 1996), has written about the social impacts of mining in many parts of Australia, especially focusing on Aboriginal groups. Richard Jackson (1991), meanwhile, has looked at the influence of the mining industry on local peoples and governments in the Australasian region, particularly PNG and Australia.

Some of main questions or issues of concern for these human geographers with regard to mining development have, therefore, included the social, environmental and economic impacts of mining on local indigenous people. They have also considered issues of race and ethnicity, population, culture, food supply, and natural resources. Specific topics geographers have studied include migration of indigenous people and outsiders to mine sites and associated population problems, effects on transport routes and flows which intensify with mining development, changes to land tenure where indigenous land is alienated for the mining development, cultural change and how people cope with the changes.

A good example of geographers contributing to studies on mining was given by Connell (1991) and Howard (1988) in their discussion on the Bougainville issue. Bougainville particularly provides an excellent, though tragic, example of the geographical significance of mining development where the issues of a separate island, different identity of Bougainvilleans as darker in skin colour compared to other Papua New Guineans, the influx of outsiders to the island, unfair distribution of economic

benefits, and locals feeling the most negative effects led to the initiation of a separatist movement which erupted into civil unrest and the closure of the Bougainville copper mine.

Clearly through their examinations of spatial differentiation and human relations with the physical environment, human geographers have contributed to the understanding of complex issues regarding mining developments. This thesis hopes to add further depth to this understanding of the effects of mining development on indigenous people, and particularly, indigenous women, in developing countries.

2.3 Mining in Papua New Guinea

2.3.1 Economic Rationale

Prior to the production of PNG's first large-scale mining project (Bougainville copper mine) in 1972, the colonial government administration relied extensively on aid from Australia and other metropolitan countries for its development purposes. According to Auty (1993:204), Australian aid provided more than two-fifths of the government revenue and almost half of PNG's foreign exchange throughout the early 1970s. In addition, government spending during this period was more than twice that of countries of similar size and level of development to PNG (Auty, 1993:204). Papua New Guinea became independent in September 1975, and during the few years before independence through to the years after the independence, the country needed immediate capital to finance much needed development of the country. The government did not want to keep on depending excessively on Australia so it started developing some of its mineral resources which provided quick revenue and the capital base needed for the country's development.

The discovery of mineral resources in parts of the country was seen by the national government as an economic blessing which could help encourage a young country like PNG to develop and prosper. The main aim of the PNG government in encouraging mining projects in the early stages of independence was to raise capital which could then be used to achieve more desirable development aims (Jackson, 1991:19). This led to the development of large-scale mining projects like

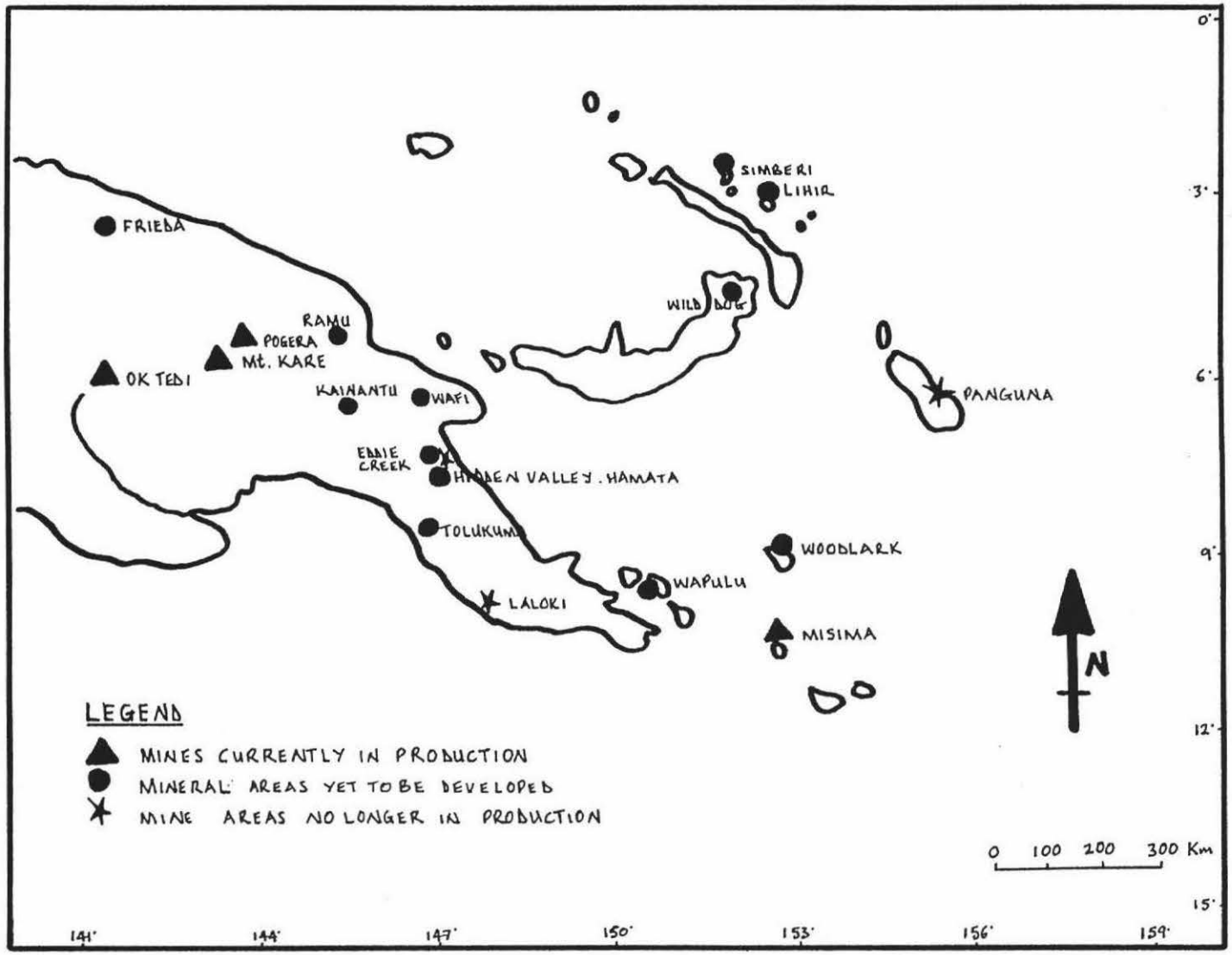
Bougainville copper mine in 1972, Ok Tedi copper mine in 1981, Misima gold mine in 1989, and Pogera gold mine in 1990. The government is also in the process of developing about 12 other significant mineral deposits (Hughes and Sullivan, 1992). Figure Four shows past, present and potential mine sites in PNG.

Like many other developing countries in the world, the mining industry has played a very significant role in PNG's economic development in the last two decades. PNG has a rich and diversified mineral resource base, including copper, gold, silver and oil. Over the past 23 years PNG has become a significant producer of valuable metals. By 1991 gold production alone earned the country $384 million and copper another $349 million (South Pacific Review, 1993:37). The mining industry (including petroleum) was the largest single contributor to Gross Domestic Product (GDP), accounting for more than 70 percent of total export values (Destination PNG, 1995:66). The development of the Bougainville copper mine led the PNG economy to grow rapidly in the 1970s with a GDP average growth of more than eight percent per year (Auty, 1993:204). In the period 1973 to 1974, the Bougainville mine alone was responsible for 64 percent of the value of PNG's export earnings (Howard, 1988:109). In addition, the PNG government was paid a total of K466 million in taxes (excluding income tax paid by Bougainville Copper Limited employees and import duties) from Bougainville Copper Limited's gross surplus of K980 million between the period 1972 to 1985 (Jackson, 1991:19). Together Bougainville Copper Limited and Ok Tedi produced more than 60 percent of all PNG export earnings in 1987 (Jackson, in Connell & Howitt, 1991:19). Since then, with the development of Pogera and Misima, the overall export earnings of PNG have further improved to more than 70 percent of the export value.

2.3.2 Location

As stated, PNG has a diversity of mineral resources which are found in just about every large island of the country (Figure Four). Altogether there are 18 different areas in PNG in which minerals including gold, copper, silver, nickel and cobalt are found. Of the 18 mineral deposit areas, 63 percent are located on the main island of the country.

Figure Four: Mining Projects and Prospects in Papua New Guinea



Source: Based on Banks, 1993.

There are three large-scale mining projects currently operating in PNG: Ok Tedi copper mine, Pogera gold mine, and Misima gold mine. There would have been four in operation today but the closure of the first mining project, Bougainville copper mine, in 1989 due to civil war, now leaves the current three. Mt Kare is also operating but is a small scale mine. Lihir mine is in the construction phase but once it is operational, as estimated for late 1997, it will also be considered a large-scale project. A significant feature of all the mineral deposits in PNG is that most are located in very remote areas of the country where infrastructure and economic development are minimal.

2.3.3 Scale of Mining in PNG

Papua New Guinea is endowed with substantial mineral resources and according to the South Pacific Review (1993:37), PNG was ranked the eighth largest producer of gold in the world in 1993. This position will soon be improved when the Lihir gold mine project goes into production at the end of 1997 and other reserves are mined as well. As described by the South Pacific Review (1993:41):

> *Papua New Guinea's importance as an exporter of copper, gold and silver is certain to increase well into the next century, and its high level of investment in the mining industry means that when the current world recession bottoms out it will be powerfully poised to make a further significant impact on world mineral markets.*

It is not surprising that the scale of mining resources in PNG has attracted the attention of many international mining companies who are always ready to make their investments when the atmosphere, both political and economic is right (South Pacific Review, 1993:37). Beginning with the country's first mining project, Panguna (Bougainville) copper mine was one of the largest open-pit copper mines in the world. This was followed by the development of three other major mining projects: Ok Tedi copper mine, Misima gold mine, and Pogera gold mine. In the case of Lihir, the gold mine, which is currently in the process of construction and infrastructure development, is expected to begin production in late 1997. As summarised in Table Three, the lifetime of these mining projects ranges from 10 year for Misima to 36 years for Lihir. However, for Bougainville

copper mine the lifetime of the project was 30 years but the conflict between the landowners and the government and mining company which flared into a civil war in 1989 caused its operations to close in 1989, with 13 years remaining. Employment in the mining projects ranges from 350 workers for Misima to the highest number of 4,000 workers for Bougainville copper mine. In terms of ore reserves, Ok Tedi has the current highest ore reserve with 137 million tonnes mostly containing copper while Lihir has 104 million tonnes containing mostly gold. Overall, Ok Tedi copper mine is currently the country's largest operational mine. Misima is the smallest of the five major mining projects in PNG (Banks, 1996:223).

Table Three: Major Mining Projects in Papua New Guinea

Mine Site	Annual Production (tonnes)	Ore Reserves (million tonnes)	Employment (number of workers)	Lifetime (years)
Bougainville Copper Mine	Copper: 170,000 Silver: 50 Gold: 15	900	4,000	30
Ok Tedi Copper Mine	Copper: 200,000 Gold: 8 Silver: 13	137	2,500	30
Misima Gold Mine	Gold: 6 Silver: 100	46	350	10
Pogera Gold Mine	Gold: 26	59	900	18
Lihir Gold Mine	Gold: 18	104	1,300	36

Sources: Howard (1988:98), Quodling (1991:4-5), South Pacific Review (1993:39), Banks (1996:223), and LMC Prospectus (1995:61).

While obviously mining is seen by governments of developing countries (such as PNG) and Multinational companies (MNC) as a crucial industry, it sometimes has negative impacts on indigenous people living near mining sites. The remainder of the chapter will, therefore, explore how indigenous peoples in general, and women in particular, have been affected by mining developments.

2.4 Importance of Land to Indigenous People

Indigenous people are a distinct group of people who have defined cultural values, tribal social structures, a survival history, and a land-based economy that characterises their group (Connell and Howitt, 1991:3). In this discussion, indigenous people are referred to as a group of people who:

> *....trace their ancestral origins to the land upon which they live, who have cultures rooted in their ancestral land, who have languages and traits which render them distinct and who are conscious of their identity as distinct people (World Council of Churches, cited ToVagira, 1990:5).*

They can be distinct in terms of the colour of the skin, race, ethnic group, language, tribal group, or village and clan groups in a more fragmented society such as in PNG.

A significant factor about indigenous people in most developing countries is their natural attachment to land. Land is the symbol of their very life and identity. As described by ToVagira (1990:6), "Land for indigenous people plays a role in defining their selfhood and community, their being and belonging, their identity and identification". In addition, three Bougainvillean students in PNG described their attachment to land during the early stage of mining in Bougainville as:

> *Land is our life. Land is our physical life - food and sustenance. Land is our social life; it is our marriage; it is status; it is security; it is politics; in fact it is our only world. When you (the administration) take our land, you take away the very heart of our existence. We have little or no experience of social survival detached from the land. For us to be completely landless is a nightmare which no dollar in the pocket or dollar in the Bank will allay (Dove et al., cited Connell, 1991:60).*

Land is thus the most important asset for indigenous people. Land provides indigenous groups of people with the fundamental basis for their survival and livelihood. For instance, they own land, they

use it, eat from it and are buried in it after death (Naibuka, 1983:75). They have a very intimate relationship with their land. Thus they guide and protect their land with their lives. Expressing their value of land in a paper submitted to the Non Governmental Organisation (NGO) International Conference in Geneva in 1981, the North American Indian delegates described that:

> *Our land is more valuable than your money. It will last forever. It will never be perished by flames of fire. As long as the sun shines and the water flows, this land will be here to give life to people and animals (cited ToVagira, 1990:15).*

Land is sacred to indigenous people because it is on the land that they are born, live and die. It represents the concrete expressions of the presence of the past. It is a pledge of the group's continuity with its past and its future. It is the means of identification of the indigenous people. Traditionally, the social structure of indigenous communities revolve around the land. Within the indigenous groups of people are different systems of land tenure. People live in cultural groups commonly known as clans or tribes and land is communally owned through the lineage system of such groups, for example, through a matrilineal or patrilineal lineage group. There is no individual ownership of land.

Some indigenous groups of people today live in very remote areas where their lives are based around subsistence activities, whereby they work on the land for their daily needs. For example, on the land they make their gardens and produce vegetables, hunt wild animals to supplement their diets, and get materials for their shelter and other domestic needs. From the sea and rivers, they collect shells and catch fish for their food, and drink, wash and cook using water from the rivers. Indigenous people respect and treat their natural environment with care because it provides them with basic sustenance of life[12].

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[12]According to Dasmann (1988), many indigenous peoples are, or used to be, 'ecosystem' peoples. For instance, they rely on local ecosystems to take care of them and are well aware that once they destroy the local ecosystem they will suffer the consequences. They are distinct from 'biosphere' peoples, including most residents of Western countries, who draw on resources from all over the

An understanding of the importance of land for indigenous people is considerably important for this study in the sense that it provides the logic behind why indigenous people are greatly affected and suffer when their land is alienated and their natural environment destroyed for the purpose of economic development.

The discussion which will follow is about major mining development projects and their impacts on indigenous people. Note that sometimes I will use the terms 'local people' or 'landowners,' who are the indigenous people of that area.

2.5 Benefits of Mining for Indigenous Peoples

Most mining projects in developing countries are located in very remote areas where government services and infrastructural development is poor. As in the case of PNG's mining projects, most are located in the least developed parts of the country, for example, the Ok Tedi copper mine is in the Star Mountains of Western Province, Pogera gold mine is in Enga Province, Bougainville copper mine is in the Panguna mountains, and Misima gold mine is on the remote island of Misima in Milne Bay Province (Figure Four). Mining development in such neglected areas provided much needed capital and infrastructural resources for most local people directly affected by the mining projects (Connell and Howitt, 1991:1). Most indigenous people, in the case of PNG, with the exception of the indigenous people of Bougainville, were actually happy in the first instance with the prospect of mining development on their land and the benefits they would gain from it. The mining projects were seen by most of the local villagers as a favourable agent for bringing business and a cash income to them, something neither the provincial nor the national government of PNG had been able to do adequately (Jackson, cited Banks, 1993:321).

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globe for their livelihoods (for example, in the supermarket they may buy rice from the Philippines, pineapples from Hawaii and a can of tuna from fish caught in the Solomon Islands) thus they do not directly see the impacts of their consumption patterns on these ecosystems.

The positive impacts of mining development on indigenous peoples vary in terms of time and place. However, most commonly they come in the form of economic benefits such as a rapid increase in cash income, for example, in receiving compensation payments for the direct loss of land, buildings, village settlements, crops, trees, stock, and for pollution caused to the environment; lease and royalty payments; employment and wages; and sometimes business contracts (Connell and Howitt, 1991:11; Banks, 1993:321;). Examples of compensation payments in PNG mining projects included the Bougainville project where locals (from 62 villages) were paid a total of K17 million over the period 1969 to 1988; the K35 million paid to 4000 Ipili and Paiela people in the Pogera mining area in 1992; and the annual payments of K320,000 to the landowners in the Ok Tedi mining area (Banks, 1996:223; Pintz, 1984:163). Most compensation money was put in trust accounts which helped many landowning groups and individuals set up and participate in small-scale businesses like trade stores, poultry and piggery projects and contractor businesses associated with the mining development. In addition, the local people were given many opportunities to own businesses, invest and earn more money. Thus the indigenous people in the locality of mining areas in PNG received and enjoyed hard cash benefits from compensation payments (Banks, 1996:224) while indigenous people in some other developing countries such as the Soroako people in Indonesia and Cordillera peoples in Philippines received none (Howard, 1988:66; Robinson, 1991:111). Furthermore, the indigenous people in PNG were also able to buy and own some percentage of shares in the mining venture at a reduced rate and obtain a share of the profits (Banks, 1993:321). With a recent (1990s) favourable government policy, most landowners in the mining areas of PNG are now entitled to a 5 percent share of the 1.25 percent royalty on production that is paid by the company to the government (Howard, 1988:98).

In terms of employment, although most locals lacked skills and experience in the technical work offered by the mining project, many were happy to take on unskilled work as at least they had the opportunity to get some kind of employment and earn a cash income. Local people, particularly in the cases of PNG, Fiji, and New Caledonia, had the opportunity to receive regular wage income (Howard, 1988:89; Plange, 1991:93; Connell & Howitt, 1991). Others were recruited for special

trade training programmes like carpentry, heavy equipment operations, mechanics and other required trades, provided by the mining company to boost its workforce for the mining operations. Other benefits included good training opportunities for the younger generation, improved education, health, transportation and communication services, and many other infrastructure developments. Many of these benefits were enjoyed by locals in Bougainville, Ok Tedi and others experiencing mining developments (Quodling, 1991:37; Howard, 1988:106; and Gerritsen and Macintyre, 1991:43).

As stated, the improvement in economic and infrastructural development to the local people has also contributed the local people's mobility, employment options and standard of living. For example, in Bougainville, improvement to infrastructure facilities, especially the transportation network, encouraged many other Bougainvilleans to expand their cocoa and copra production enabling them to earn more money from cash crops. However, as will be discussed, the so called positive impacts of mining for indigenous people have been inadequate, and they can be considered as short term benefits which cannot be favourably compared with the long term losses they start to see during the mining operations and which they must live with after the mining operations' end.

2.6 Negative Impacts of Mining on Indigenous Peoples

It has been argued that in many developing countries mining development projects have caused more negative impacts to the indigenous people than positive (Hughes and Sullivan, 19921). The negative impacts are said to be experienced by the local indigenous people during and after the life time of the mine while benefits only last for a short while. However, the impacts of mining are not the same everywhere. They are said to be "different over time and space" (Gerritsen and MacIntyre, 1991:37).

The physical development of mining projects can occur very quickly and requires very rapid adjustment of the local community. This is because mining projects are typically large, and thus have relatively large impacts on the social and economic structure of indigenous societies. In many

cases, indigenous people are left out in major decision-making processes, from the initial approval of the project, through detailed planning of its implementation, to its long-term operational management (Stayner, 1992:1). This process promotes the disempowerment of indigenous peoples and as a disadvantaged group they become more vulnerable to the negative impacts caused.

Mining developments which occurred in developing countries during the colonial era were more focused on making money than the socio-economic development of local indigenous peoples, including the working and living conditions of local workers and villagers in the directly affected areas. In the post-colonial era still, however, many indigenous peoples in developing countries have very little say in the development of mining projects. Indigenous people, for example, in countries like Indonesia, the Philippines (during the Marcos regime), and Brazil in the early years of independence, had their views suppressed by their governments and suffered a lot from mining developments. Others in the South Pacific countries like PNG also suffered even though they had some representation in processes of mining development (Howard, 1988; Banks, 1996; Filer, 1996; Connell and Howitt, 1991). There was little difference in terms of indigenous participation in mining development either during the colonial period or in the post-colonial era.

Mining developments have a wide range of negative impacts which can be classified as economic, social, and environmental, and which can affect a wide range of people over a long period of time (Stayner, 1992:5).

2.6.1 Negative Economic Effects

As stated, the development of most mining projects brought with them many changes to the local societies and one such change is the rapid increase in monetization of the local economy, through employment, compensation, royalties and business opportunities (Connell and howitt, 1991; Gerritsen and Macintyre, 1991; Stayner, 1992; Filer, 1996, Banks, 1996). However, as many indigenous people have realised in the recent years, most of them at mine sites occupied unskilled jobs, earned very low wages, and endured a lot of hardships in terms of very harsh working

conditions. As described by a Catholic priest about the working conditions of indigenous Fijian workers at Fiji's Vatukoula gold mine:

> *Phew! the sweat, it just literally burst out of your body you know. The heat was terrific. And it was quite a long way down and it's pitch dark except for the dim bulbs overhead....And the men would be naked, just have a pair of shorts or probably nothing at all, and one chap would be hosing them all the time, as they were working....They even drink tea down there, they even have their tea break underground and so on. Some of that is perhaps inseparable from mining (Plange, 1991:99).*

Besides harsh working conditions, local indigenous groups were also unfairly treated by having very little financial share (as in the case of Fiji) or no share at all (like in Indonesia, Philippines, and many other developing countries in Africa and South America) in the mining projects, and insufficient royalties and compensation money (Howard, 1988). Multinational companies (MNCs) and governments dominated in terms of gaining revenue from the mine. In PNG's mining industry MNCs usually take the biggest share of the mining profits (Table Four). There is no mention of PNG's indigenous landowners owning shares but most would usually be given up to 5 percent of the government's percentage. In terms of the value of the minerals extracted in developing countries, a large percentage of them leave the country by way of the company's capital repayments, freight and transport costs, remitted wages, purchases of imported goods or services, or dividends. A large percentage of the remaining earnings go into the government coffers while indigenous people receive very little. For PNG, most young landowners are not happy with this equation and feel the compensation they receive is inadequate and the small percentage in shares they get is unfair and fails to compensate for the loss their land, social decay, and destruction of their natural resources. The civil war in Bougainville is a reflection of the resentment and hostility from the locals towards the mining project (O'Faircheallaigh, cited Banks, 1993:319).

Table Four: Mining in PNG and Major Shareholders

Name of Mine	Major Shareholders
Bougainville Copper Limited	. CRA 53.6%; PNG Government 19.1%; Public 27.7%
Ok Tedi Copper Mine	. BHP 30%; AMOCO 30%; PNG Government 20%; Others 20%
Pogera Gold Mine	. Placer 30%; Highlands Gold 30%; Renison 30%; PNG Government 10%
Misima Gold Mine	. Placer 80%; PNG Government 20%

Sources: Welsh 1990; Kennedy 1991; Fallon 1992, cited in Banks 1993.

The establishment of mining towns including shops with Western goods and being surrounded by mine employees who have money to spend establishes an atmosphere which greatly influences the locals to want to have more money to spend. Monetisation of the economy has intensified indigenous people's dependence on money and led to them disregarding many activities in agriculture such as cash cropping and subsistence agriculture. In addition, Banks (1993:322) described that:

> *Negative economic impacts can include the loss of agricultural land and labour to the mine development. An economic dependence on the mining company can also occur, with a corresponding neglect of other avenues of development. The much wider incorporation of the local population into the cash economy can result in the loss of the subsistence component of the pre-existing economy (Banks, 1993:322).*

In the case of Bougainville, when landowner's demands for a better share of the profits and other ancillary benefits were ignored by the national government and the mining company, BCL, civil unrest broke out as a result permanently closing the mining operations. Even though the landowners were compensated they felt it was inadequate compared to the value of minerals extracted and the permanent destruction caused to their land, environment and society. Furthermore, compensation

was unevenly distributed and there was also inequality in the distribution of labour and wages (Howard, 1988:100; Hyndman, 1991:86).

As discussed, most indigenous people whose land was taken for mining development, received few economic benefits compared to what the mining companies and the governments were receiving from the minerals extracted from their land. Most indigenous people suffered socially too while at the same time becoming more dependent on money from the mining project.

2.6.2 Social Impacts

As stated earlier, most mining developments in developing countries are located in very remote and underdeveloped areas and the social changes associated with the developments are always dramatic and in most cases very destructive to the indigenous communities. As Banks (1993:322) described:

> *Social impacts are often the most devastating, leading to what Filer (1990) described as the process of 'social disintegration' in the local communities. Certain processes internal to the local community contribute to mining 'time-bombs' - the self-destruction of local communities. These processes include the delineation of traditional communally held land for the purpose of mining leases, the uneven distribution of mining royalties within local communities, the subsequent stratification of the local population, and the problems associated with inheritance and succession within these communities.*

Connell and Howitt (1991:1) argued that most mining developments in developing countries had not been successfully linked to the development goals of indigenous groups of people. Common results have been that indigenous people are further marginalised and disempowered by mining developments. Local communities have faced the heaviest burdens of mining developments, especially in social and environmental terms (Connell and Howitt, 1991:9). The social changes that commonly emerge from mining developments include the loss of traditional land, dramatic increase

in population, increased social disorder, and loss of power of traditional leaders. These changes, to be discussed in turn, are of great concern to many local populations in mining areas and this usually leads to a lot of infighting as well as fighting between them and mining companies.

2.6.2.1 Loss of Land

Most indigenous people affected by mining developments live in remote areas where a subsistence economy dominates thus they depend very much on traditional land for their survival. For them, land has been and will always be the source of life. Thus the development of mining projects on indigenous land poses a threat to traditional land-use patterns through the alienation of land for mining infrastructure and associated developments. This also disturbs the traditional social and economic cycle indigenous people have of depending on the land for their survival needs. For example, as identified by Pintz (1984), Quodling (1991), Plange (1993), Hughes and Sullivan (1992), Robinson (1991), Connell and Howitt (1991), and Howard (1988), the acquisition of traditional land has a lot of effects on the lives of the local people in terms of their dependence on land for food and a living. This was experienced by most people living in mining areas like in Bougainville and Ok Tedi.

As an important part of the indigenous people for generations, the sudden changes imposed by mining developments on traditional land is usually very difficult for indigenous people to cope with, especially when it is acquired for open cast mining purposes which causes massive destruction to the land. As described by Connell and Howitt (1993:4), the development of mining projects on indigenous land destroys not only their land but their identity and source of survival. They become more confined to particular land areas and degrade the land further by over-using it. Furthermore, their status as a tribe or a clan group diminishes with the destruction of their land.

For Bougainville, the development of the Panguna Copper mine saw the land belonging to the Nasioi-speaking people[13] including Dapera, Moroni and Guava villagers, acquired for the mining development. Before the mining development, the locals in the mine affected villages primarily lived subsistence lives while relying on some income from doing labour work at plantations and agricultural economies. The loss of their land, especially the Dapera and Guava villagers, resulted in the end of their dependence on agricultural economies and the beginning of their dependence on the mine for cash income. As described by Connell (1991:58), population pressure and land shortages created other problems like the depletion of bush-land, hunting and fishing grounds, their source of food in wild animals like pigs, possums, flying fox, and fish from the rivers. This was due to the destruction and pollution caused to their natural habitat.

2.6.2.2 Increased Population

Dramatic increases in the population in mining areas has been common and this has caused a lot of problems for the local indigenous groups. A large percentage of the population in mining areas is usually comprised of migrant workers, for example, expatriates and other skilled workers from within the country. Most of these outsiders occupy the bulk of the jobs for the mining operations. Others from within the region or the country also come in big numbers seeking unskilled employment. These migrants usually end up making settlements on indigenous land and creating more social problems for the locals. In most instances, the influx of mine workers, especially young single men, from other parts of the country and overseas creates social problems arising from prostitution, alcohol abuse and gambling (Banks, 1993:323). Local people often become involved in these activities. For example, in Ok Tedi's Wopkaimin road side settlements alcohol abuse, village fights and prostitution have become more common. Similar cases were experienced by locals in mining areas in Fiji, Brazil, and PNG (Plange, 1991; Howard, 1988; Connell and Howitt, 1991).

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[13]Villagers of the Panguna environs on whose land mineral deposits are located who have been subjected to the highest level of social disruption and land loss from mining operations.

As described by authors Howard (1988) on the population problems experienced in New Caledonia, Jackson (1991) on Hidden Valley gold mine, Connell (1991) on Bougainville copper mine, Banks (1991) on Pogera gold mine, and Plange (1991) on Fiji's Vatukoula gold mine, the development of mining projects brought many migrant workers who caused imbalances in the population. Sometimes the local population became a minority, for example, as in the case of New Caledonia, and Fiji. The presence of so many outsiders also threatens local cultures, lifestyles, and languages.

2.6.2.3 Increased Social Disorder

The loss of land, the entrenchment of a monetary economy, and the dramatic population increase in mining areas creates a whole dimension of change which many indigenous populations find extremely difficult to cope with. While the local population is adapting to the loss of their land and the changes happening to their natural environment, the influx of migrant workers who arrive with their many different cultures, new languages and new disease introduced create other social problems for them which threaten the survival of their culture and social identity. In addition, increased economic activities have also had a great influence on the local people, diverting their attention from traditional subsistence and economic activities to the mining project as if it was the only source of cash income. Locals living within the mining areas have been attracted towards the mining township thinking that they would find jobs to earn some money, thus they abandon their villages and end up settling in squatter settlements. Some of them get unskilled general labouring work while others become frustrated at their inability to find work. The exposure of the locals to the monetary world and to so many western goods sold in shops at the mining township has undermined the traditional lifestyle and culture. This is especially true for young people. Two other problems which typically emerge during the process of the mining operations in many countries include alcohol abuse and prostitution.

As experienced by locals in mining areas in Bougainville, Pogera, Mount Kare, Misima, and Vatukoula, the discovery and development of minerals on their land brought in many social problems such as disintegration of families and village communities as villagers migrate into mining areas to

find jobs, change and disruption to traditional culture and lifestyle, increased land disputes and tribal violence, increased alcohol abuse and related problems, increased prostitution activities, increased vandalism and criminal activities, and increased disputes over unequal distribution of cash and other benefits of the mine into their communities (Jackson, 1991; Gerritsen and Macintyre, 1991; Connell, 1991; Plange, 1991; and Emberson-Bain, 1994). Local communities in mining areas experience more social problems during and after the mining period. As a prominent Bougainvillean, Leo Hannett, expressed:

> *Our once-peaceful, non-violent living is now forever shattered: we are constantly harried by day and haunted by night with continual acts of violence in our midst. Where we once walked with our heads high, now we move around with our heads hanging low.....never quite knowing what to expect from these outsiders, heartless outsiders with their heartless machine slowly eating out like a cancerous growth the soul of our community; degenerating, humiliating, and dehumanising us with their 'development' at our expense. We are now made strangers in our own land (cited in Connell, 1991:60).*

Many young locals and migrant workers were involved in causing social disorder within the vicinity of the mining area. Local elders were unable to help because they no longer had the power and authority as before. Social harmony and order in most indigenous communities disintegrates when mining development occurs. As described by Emberson-Bain (1994:56):

> *They underscore the depressing reality that mining by large-scale transnational capital, commonly supported by national political elites, is arguably proving to be one of the most destructive and violent forms of Western-style development.*

While this statement is true for most of the indigenous people in mining areas of developing countries, the situation is worse for indigenous women.

2.6.2.4 Breakdown of Culture and Loss of Power of Traditional Leaders

There are two main cultural issues which have become common in local communities within the vicinity of mining areas of developing countries: the loss of power of traditional authority, and the younger generations' growing habit of disrespectful behaviour towards culture.

In places such as in Bougainville, the Philippines, Namibia, Fiji and Indonesia, most mining projects were not in the best interests of the local people but in the interests of the governments (in the name of national development) and the multinational mining companies. The local people's voices were practically absent from decision-making, negotiation, and planning of mining projects. Thus local concerns and priorities were not presented and addressed for appropriate action. This arrogant attitude by the government and the mining companies really undermined the power of local leaders (Howard 1988; Cooper, 1992; Quodling, 1991; Bedford and Mamak, 1977).

In other cases, local representatives are involved in mining negotiations, but many traditional leaders have been sidelined in this process by more worldly younger men. Traditional leaders have lost their power and authority over the handling of community affairs to younger men of the community, who may have been more educated and radical about issues concerning the mining development and its impacts on the local communities. As in the case of Bougainville, young radical leaders like Francis Ona took over leadership and staged a number of protests over the issue of impacts on the local population and inadequate compensation paid for the damages done to their land. Other young leaders strongly support mining development and have little regard for the views of traditional leaders.

In addition, the opportunity for the locals to earn some money in the mine and their consequent migration towards mining areas also contributed to the destruction of their solidarity base as a distinct group (Howard, 1988; Plange, 1991; Hyndman, 1991). In the mining area they would end up living in squatter settlements or company accommodation with many other migrant workers who have different languages and cultures. Their exposure to western and to so many other cultural

behaviours usually influenced them to become more individualistic, rather than striving for togetherness with their local communities. Local communities in the vicinity of the mine are usually affected the most. One of the first signs of cultural breakdown is the diminishing respect for traditional leaders.

Mining development has undermined local cultures by leading to new forms of social stratification, for example, as mentioned earlier, at mining sites the locals hardly ever get up to the supervisory and managerial positions because these are typically reserved for the expatriate workers. Many protests were aroused in Ok Tedi as local men complained about white men wearing white helmets to clearly indicate their authority while the unskilled Wopkaimin (the local indigenous people) workers wore yellow helmets (Hyndman, 1991:85). Such stratification can undermine the self-esteem and dignity of indigenous tribes people, which can erode the cohesiveness of their tribe.

2.6.3 Environmental Impacts

The impacts of mining on the natural environment is one of the most important concerns for the indigenous people because their entire life has depended so much on it for their survival over many generations. They often depend on the natural environment, which enables them, as it did their ancestors before them, to sustainably collect materials for building, tools, weapons, artifacts and traditional medicines.

As mentioned earlier, governments of most developing countries are keen to bring investors into their country to boost their economic base, thus they welcome multinational mining companies to prospect for minerals and to develop the resources when found. The concerns of local indigenous people about environment problems are secondary. Mining, however, typically causes extensive destruction to the land, the forest resource, rivers, and the sea. The most destruction is caused when massive areas of land are cleared for infrastructure development, the mine site, townships and settlements. The environmental impacts of large-scale mines include the direct loss of land for the mining operation, land degradation, destruction of natural vegetation and ecological habitat, the

loss of hunting grounds, the loss of water supplies and fishing areas due to contamination of rivers and sea, and noise and dust pollution (Banks, 1993:322). Examples of environmental effects of mining projects are identified clearly in Bougainville and Ok Tedi when tailings from the mine caused much pollution and destruction to aquatic life in the Jaba and Fly rivers thus destroying important sources of food for the locals living along the rivers (Quodling, 1991; Hyndman, 1994; Hughes and Sullivan, 1992; and Hyndman, 1991). Other environmental effects included clearance of vast areas of forest for the mining development, destruction to hunting and fishing grounds, causing flooding of rivers, overcropping (through reduced fallow times) due to land shortage, and the contamination of drinking water from hazardous chemicals such as cyanide, as experienced in Ok Tedi (Hyndman, 1991:79).

2.6.4 Summary

The negative impacts of mining development felt by the indigenous communities in mining areas have been clearly spelt out. These negative impacts include cultural breakdown, social disorder, loss of land, and environmental destruction. However, within the indigenous communities it is women who have experienced more burdens and suffered the most. Women have traditionally been suppressed and disadvantaged by culture and the establishment of mining projects has added to their suppression. This will be discussed next.

2.7 Impacts of Mining on Women

While there have been numerous studies on the impacts of mining in general, rarely have studies examined the impact of mining on indigenous women whose land provides the resource (Connell and Howitt, 1991:2). In many societies of developing countries women inherit land and they are considered customary land owners. Such societies are called matrilineal societies and in them children own land belonging to the mother's line. However, as in many other societies, a common fact is that women are a disadvantaged group and are not considered for consultation, important decision-making, planning, and participation in the operations of a mining development even when they are customary landowners. As described by Emberson-Bain (1994:3), women are:

....a sub-group at the bottom, subjected to a range of controls over their sexuality, mobility, reproductive and productive labour, and access to such vital resources as land.

Thus whether in matrilineal or patrilineal societies, indigenous women in developing countries are adversely affected by mining and other large-scale development projects.

Because little has been written about the impacts of mines on women in developing countries, nothing much has been done to properly address the impacts of mining on women. Women are typically the most silent and suppressed social group in their societies and they rarely voice their concerns in public. This is one reason why women suffer most from large-scale resource development projects such as mining projects.

The impacts most adversely felt by women in mining areas include negative social, environmental and economic impacts. Many mining projects have led to what Susanne Bonnell (1994:162) describes as a decline in women's economic and social status relative to that of men. These socio-economic impacts arise from the loss of land, increased workload for women, greater suppression of women and domestic violence.

2.7.1 Loss of Land

In matrilineal societies where women traditionally inherit land, their rights to the land have always been undermined when it comes to decision-making and negotiations prior to mining projects on their land. As experienced in Nauru during the development of the phosphate mine and PNG, with the Bougainville copper mine, women were never consulted and their voices were absent in the whole process of decision-making and planning of the mine, even though they traditionally held ownership rights to the land (Emberson-Bain, 1994:49; Macintyre, 1989:1). They were also the last to receive any socio-economic benefits (Emberson-Bain, 1994:1994). The development of these mining projects meant that women lost their land as well as their status as customary landowners.

The loss of land for mining projects has had adverse impacts on local women in both matrilineal and patrilineal societies, however. In developing countries, the every day life of women is often firmly rooted to the land. Her work revolves around and depends upon the land and the natural environment. For instance, in Melanesian societies, from the forest women collect firewood for their cooking, tools for their gardening, materials for handicrafts and household use, (for example, seating and sleeping mats, and baskets), gather wild fruit and edible plants for food, hunt for honey and lizards, and collect many other items for family wellbeing. The situation of the Cordillera women in the Philippines is similar (Howard, 1988:65).

With the destruction of natural resources, women in these mining areas no longer have the freedom and independence they once enjoyed. Many have since become very dependent on their husbands to provide money for household needs. As described by Emberson-Bain (1994):

> *The land losses and environmental abuse, the diversion of labour and other forms of socio-economic dislocation have placed traditional system of food production under considerable stress and generally undermined the sustainability and self-reliance that existed before mining. They have had grave implications on families, encouraging a greater dependence on store-purchased goods. In their traditional role as unpaid reproductive labour, women in mining communities feel the harsh effects of the industry most acutely.*

2.7.2 Women and Inequality in Mining Projects

According to Emberson-Bain (1994:98), mining has proved to be a bad form of development, as it had generated social inequalities creating community tension and conflict. Some of the worst inequities stem from women's lack of participation, or participation on unequal terms, in mining projects.

Women's lack of participation in mining development generally begins when they are not involved in major decision-making processes concerning the mine. Good examples of such one sided dealings include most mining projects in Papua New Guinea (Panguna, Ok Tedi, Pogera and Misima), and Fiji. In the French colony of New Caledonia, women were totally forgotten, with reasons that they were only women and culturally restricted from participating. It was not thought that they could contribute resourcefully (Emberson-Bain, 1994:46).

In terms of employment, women comprise a very small proportion of the mine workforce as in the case of PNG (Emberson-Bain, 1994:100; Robinson, 1991:114). Most of those who have jobs with the mine are usually women from other parts of the country who have good education and training (Emberson-Bain, 1994:51). Indigenous women, especially those with high illiteracy levels, have little chance of getting good employment from the mining projects. Most are left at home to take care of household concerns.

According to Emberson-Bain (1994:100), barriers to women's involvement in employment stem from the gender biased notion from mining companies that most work in the mines was suitable only for men, and due to cultural restrictions. These barriers have caused greater economic marginalisation of indigenous women while enabling men to prosper and become dominant in most socio-economic developments associated with the mine. Good examples of such experiences were felt by local Soroako women (Robinson, 1991), Fiji, Pogera, Ok Tedi, and Misima women (Emberson-Bain, 1994; Gerritsen and Macintyre, 1991; Hyndman, 1991; Plange, 1991; and Howitt, Connell and Hirsch, 1996).

There is also inequality in the sharing of other benefits like royalties and compensation money from mining projects with women. As in most mining developments in PNG, for example, in Bougainville, Ok Tedi, Misima and Pogera, such benefits were received only by men (who were put forward as representatives of the landowning clans) and they controlled much of the money. Women would commonly hear their husbands boast of drinking away their royalty payments. Sometimes women

and their children did not have the chance to use money from such payments. As discussed by Emberson-Bain (1994:98), the distribution of mine benefits covering royalties, compensation, wages and other monetary gains has always been concentrated in the hands of local elites (mostly men) as well as foreign shareholders and the national governments while women were forgotten.

2.7.3 Increased Workload for Women

The engagement of local indigenous men in mining workforces has caused two main problems for their women: increased workload and disruption to family togetherness (Bonnell, 1994:162; Macintyre, 1985:45; Gerritsen and Macintyre, 1991:47). For example, in Ok Tedi the migration of Wopkaimin men from their villages to work in the mine had their women doing a major share of village subsistence farming, garden clearing, fencing, house building, fishing and hunting (Macintyre, 1995:44). In Fiji, women had to work extra hard to supplement the low wages earned by their husbands so they took over in growing food, fishing, gathering firewood and weaving and selling mats just to keep the family going (Emberson-Bain, 1994:55).

In addition to the increased workload of indigenous women, men's occasional absence from home because of work for the mining company disrupts family togetherness. Most women manage to cope in taking care of household affairs while their husbands are away but the absence of men effects family solidarity and the traditional way of bringing up children, for example, in teaching boys and girls about their culture and associated responsibilities (Macintyre, 1995).

2.7.4 Increased Domestic Violence and Suppression of Women

According to Emberson-Bain (1994:101), most mining projects have reinforced traditional controls over indigenous women in mining areas in the Pacific region. The marginalisation of indigenous women during the process of mining development has placed them in very vulnerable positions where they are excessively controlled and suppressed by their husbands. Women have experienced violence at the hands of their own men, especially their husbands. One example of men's control over their women is currently experienced by Melanesian women in mining areas such as Ok Tedi

as their monetary value increases in terms of their bride price value. For example, a Wopkaimin man paid K3,500 for his second Wopkaimin wife, and another paid for a Central Province women K9,000[14]. As described by Emberson-Bain (1994:100), traditional valuables used to pay bride price have been displaced by cash and this has degraded women's status by using them as male-controlled business commodities. This situation devalues women's status in the eyes of men and exposes the control and authority of men over their women (Hyndman, 1991:84).

Most experiences of violence and suppression of indigenous women begin at the household level. As cash has replaced traditional valuables and as women become more dependent on husbands for their cash income for household requirements, men become more powerful both in the household and in the local community. Indigenous men sometimes use their power to become more violent and abusive towards their women. In most cases, their violent behaviour becomes excessive when they are under the influence of alcohol. According to Emberson-Bain (1994:101) and Connell and Howitt (1991), heavy alcohol consumption by indigenous men, as experienced in PNG's Bougainville, Ok Tedi, Misima, and Pogera, and Fiji's Vatukoula mine, has led to increases in men's sexual control over women and domestic violence. Sexual harassment and rape have also became common in local communities near mining areas as in Ok Tedi (Hyndman, 1994:117). In addition, Hyndman (1991:85) notes that prostitution becomes more common as women's sexuality is alienated from themselves and controlled by men (Hyndman, 1991:85).

Most women in mining areas in developing countries suffer most and benefit the least from mining developments. Because they had no power in decision-making and in controlling wealth they become marginalised and suppressed in most aspects of economic development.

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[14]Traditionally, bride price is paid using traditional items such as pigs, shell money and garden produce. In some areas where cash has became an item of exchange, bride price would cost some hundreds of kina (K300 to K1,000), however it varies from place to place.

2.8 Conclusion

This chapter has examined the social, economic and environmental impacts of mining, showing that these impacts are most extreme around the mine site affecting the indigenous peoples in the locality of the mining area while the benefits are more spread out. Some economic benefits flow to local elites but most of them are concentrated in the hands of the government and the companies extracting the minerals. Social impacts include the loss of land and increased dependence on money, increased population which causes pressure on land-use, increased social disorder causing social disintegration of communities, and the disempowerment of the indigenous people. A significant impact on indigenous people has been that they have become more marginalised and disempowered with the development of mining projects.

It has been evident in most indigenous communities that mining developments have had more adverse impacts on women than men. This is an important issue which, until now, has not received sufficient attention from human geographers. Indigenous women are typically the last to receive the rewards and benefits of mining while at the same time bearing most of the burdens caused by mining and associated developments. Women are suppressed in both the household and local community as social conflict and violence by men becomes more common. In general, mining has made indigenous women weaker and more dependent on men. It had also led to more abuse from men.

However, many of these difficulties and problems caused by mining projects have been ignored in the past, especially because they happen to a disadvantaged social group in a society who find it hard to speak out for themselves. The governments have more interest in bringing investors into the country than in the plight of indigenous people while the investors are more interested in making profits. In this trend indigenous people, especially women, are forgotten. In PNG, the inadequate consideration of negative social, economic and environmental impacts of mining led to the indigenous uprising which caused the closure of the giant Bougainville copper mine. Thus it is

important that mining companies and governments pay more attention to the social impacts of their activities.

The following Chapter suggests an approach of alternative development which can be used to alleviate problems of disempowerment of indigenous groups of people and to help them participate in a more just manner in development activities.

CHAPTER THREE: WOMEN, DEVELOPMENT AND EMPOWERMENT

3.1 Introduction

Chapter Two discussed some of the major impacts of large-scale mining projects on indigenous people. Evidence suggested that mining developments have a lot of negative impacts on disadvantaged social groups in local communities, especially women. This chapter moves on to consider barriers to women's development in Third World countries and the concept of empowerment as an alternative approach to development for disadvantaged social groups such as women. This chapter is important in that it provides the foundation for understanding the marginalisation of many Third World women in relation to the mainstream model of development and considers how an approach can be developed to properly address this situation. Furthermore, the ideas presented here will be incorporated into an empowerment framework which will be used in later chapters to analyse the situation of women in Lihir.

To begin, there is a brief discussion on the notion of development in terms of disadvantaged people's perspectives.

3.2 What Does Development Mean to Disadvantaged Groups of People?

With regards to Third World countries, development is generally thought of as the process of growth towards a better standard of living. Antrobus (1984), described development as "the constant improvement of the well-being of the entire population on the basis of their full participation in the process of development and a fair share of benefits therefrom" (cited in Momsen and Townsend 1987:16). It has also been described as a continuing process of mutually related economic, social and political change in a society (Tamate, 1987:59). In most definitions of development both men and women are assumed to have equal participation and equal benefits. This means that both men and women should have equal opportunities to improve their living standards and to participate in the political, social and economic prosperity of their country. Development is

not supposed to benefit one group of people only. It is a process of improvement for the lives of everyone in the household, the clan, the village, the society or the country as a whole, regardless of sex.

The integration of many developing countries into the capitalist world has brought along many changes to indigenous societies. Many developing countries have engaged multinational companies (MNC) with the aim of improving their economic growth. These MNCs are encouraged to extract natural resources to make profits, a percentage of which will be passed on to the government. As they experience changes to their economic systems and political structures, and as many countries struggle to get out of the clutches of debt repayments by adopting the seemingly unavoidable structural adjustment programmes, criticisms have been made about the long term impacts of these changes on the majority of the people, especially the vulnerable social groups. For many developing countries, industry and capital are controlled by foreign firms and this greatly influences the whole structure of their country's politics, and their economic and social development. Some have implemented policies that favour these firms and a few nationals, while the majority of the people are powerless and disadvantaged. Furthermore, within many Third World countries there are laws and customs that are detrimental to the development of vulnerable social groups.

As identified by Benno Galjart (1995:12), most development processes in the past never started from below. They primarily adopted the "trickle down" approach, assuming that development in the long run will reach the people at the grassroots level through time. However, because of their lack of resources, land, skills, knowledge, or even labour time to avail themselves of the opportunities which incorporation into a wider economic system provides, a trickle down approach does not serve their interests. The argument is that, if other well-off people gain in development so must the vulnerable peoples.

Women are often identified as the most vulnerable and disadvantaged social group. It is they who may suffer the worst effects of capitalist progress (Moghadam, 1990:6). It is important to

recognise, however, that impacts of development on women will vary from one society to another. The following section discusses the primary barriers to women's development in the Third World.

3.3 Barriers to Women's Development in the Third World

Many women in developing countries occupy a vulnerable and disadvantaged position in society, one that has sometimes been compounded by development. For example, in the paid employment sector women are given low status jobs and receive lower salaries than their male counterparts. According to Overholt, Rao, and Anderson (1991:10), women represent the majority of the population, but they are concentrated at the bottom of the ladder of employment, education, income and status. The Commonwealth Secretariat in 1989 identified that in social reproduction, women's role focused on them being "home managers, child bearers and rearers of children and the elderly" (cited in Moghadam 1990:6). Women are further isolated from formal production and political control as their tasks and responsibilities within the household increase. As Papanek argued:

> *...gender differences, based on the social construction of biological sex distinctions, are one of the great fault lines of societies - those marks of difference among categories of persons that govern the allocations of power, authority and resources (cited in Moghadam, 1990:6).*

Moghadam (1990:9) further added that:

> *While women account for half the world's population and perform two-thirds of the hours worked, they receive one-tent of the world's income, and have one-hundredth of the world's property is registered in their name.*

This illustrates that men hold the majority of power in all aspects of development and have continued to suppress women. Women are relegated to domestic and subsistence activities within the household, to subsistence production, and to the informal employment sector. Gender roles are

changing from household to capital oriented activities as their societies strive for rapid economic development. However, despite increasing capitalization of society, the status of women is strongly tied to the roles they play as wives and mothers, and as unpaid domestic producers. Women's roles may be divided to those regarding production, reproduction and community management (Moser, 1989:1801).

3.3.1 Productive Roles

Productive roles of women include income earning activities such as wage work in offices and services and other informal sectors in agriculture, domestic and services (Townsen and Momsen, 1987:42). Most women in developing countries are involved in informal income generating activities and other formal employment, for example, lowly paid jobs in factories, to supplement family income and wellbeing (Momsen and Townsen, 1987:43). In some societies productive roles mean that women plant and rear food crops in the garden and make sure there is enough food to feed the family each day. In a country like Papua New Guinea (PNG) most women near urban areas are engaged in the production of food crops both for subsistence and the market (ESCAP/SPC, 1982:259). In formal income earning activities, women's productive roles can include employment for wage work in offices, agriculture, manufacturing, the service industry, and private businesses (Momsen, 1987). According to UNESCO, women's productive work is focused on the "basic elements of human existence" (cited in Momsen and Townsend, 1987:40) and they provide labour both in and outside of the household to produce goods and services for the home, family, and their community.

Wallace (1991:79) noted that income earning opportunities facing women vary greatly according to the culture they live in and their individual circumstances (their class, race, economic situation and whether or not they are married), therefore, women's productive roles vary. Women's roles and their participation in economic production is very much tied to and influenced by their cultural roles in the family, and the fact that sex segregation of roles is common practice.

In most developing countries, the work that women do in subsistence production is often not recognised by men as productive work. Women are a silent majority who "provide substantial amounts of unpaid labour to the production and transformation of household crops" (Moghadam, 1990:6). Kabeer (1992:5) also acknowledged that women, particularly among lower income households, who are engaged in productive work are perceived as being in the role of unpaid workers. Kabeer (1992:4) went further and identified a gender dichotomy which has been introduced into development policies of many developing countries:

> *Economic policy both assumed and sought to promote, the idea of self-interested, free floating economic man, competing in the market place, while social policy has both assumed, and sought to promote, the idea of the altruistic mother, embedded in the moral domain of household and community.*

In this sector, women's efforts were considered subsidiary to those of men who have the publically perceived and sanctioned roles as the head of the household, the breadwinner or the decision maker, which earn them higher status. The men are more involved in formal economic production, high status employment and general political activity.

On the other hand, women's formal productive roles are generally concentrated in low status jobs and similarly have very low wages compared to men. As the number of women increase year by year in formal education, so does their number in the formal employment sector. However, it has been common in many developing countries that the majority of these educated women occupy jobs such as office secretaries, receptionist, teachers, nurses and other related service jobs, rather than management. These jobs are seen by men as of lesser value because it appears to be an extension of their domestic work. A slowly increasing proportion of women have, however, been taking up jobs that have traditionally been occupied by men.

Even when formal productive work is available to women, most still have to fulfil their roles and responsibilities as mothers and providers of the household so their workloads become more intense. They may even double. Women who are involved in paid jobs may work very long hours every day because of their double responsibilities. For example, it has been estimated that married women in Malaysia and Philippines who do house work and are in paid employment outside the home spend, on average, 112 hours per week or 31 to 45 percent longer days than men (Momsen, 1991:73; Momsen and Townsen, 1987:61). In addition, Boserup (cited in Momsen and Townsen, 1987:59) described that rural women in Africa spend about 25 percent of their working day on domestic labour. This fact discourages their participation in wage earning activities outside the household. Thus women become trapped within their culturally defined roles and status.

Women face numerous disadvantages in the formal economy. They are under-represented in decision making bodies, in governing and policy-making bodies, and lack equal employment opportunities and equal wage earning opportunities. According to Tiano (cited Moghadam 1990:11), "women provide cheap and easily expendable labour, which is particularly pronounced in the Third World". The lower pay and working conditions of women reflects and reinforces the continuous social disadvantage of women. Mitter (cited Moghadam, 1990:12) further explained that the focus of many foreign firms (TNCs) is cheap labour with "the cheapest being women". Employers prefer women to do unskilled labour because they provide cheap labour and are easy to recruit. Momsen (1991:68) added that "female marginalisation is usually blamed on efforts by capitalists to minimise labour costs". It appears that in every country of the Third World there is a substantial gap between women's average earnings and men's.

Patriarchy adds to the constraints faced by women in seeking formal employment. For example, Gallin, Harper and Ferguson (1993:17) identified that women of many middle Eastern countries, North Africa and parts of South Asia are assigned socially inferior positions by law and by custom, and female labour force participation rates are the lowest here. In the Pacific Island societies, the patriarchal system is strongest in the patrilineal societies, where men inherit leadership and own

most property (Griffen, 1989). Males are also the sole decision-makers in social and political development. This can also mean that men have total power and control over their women. For example, men or fathers decide whether their daughters go to school or may go to work; they also decide how many children they will have in their family, and decide whether or not a daughter should get married. This system has greatly influenced the involvement of women in formal economic activities.

In the workforce, continuous sexual harassment of women in the place of work has been a problem for many Third World women as it has for women in the West. The attitude of many Third World men is that, "any woman who moves out of her family role in order to take a job may be seen as a 'loose' women" (Momsen 1987:73), and thus they may face constant sexual harassment by men. This factor also constrain women's enthusiasm in seeking formal employment.

Common in the formal employment sector are the stereotypical attitudes of employers and policy makers, most of whom are male, about women. They believe that women lack confidence and competitiveness, cannot handle pressures of work, and lack mobility. This attitude creates an atmosphere of lack of trust of women to be seriously considered for employment and female discrimination in the workforce emerges as a result of these stereotypes.

3.3.2 Reproductive Roles

Reproductive roles of women concerns biological creation and social maintenance of human life (Kabeer, 1992:7). In biological reproduction, women have the important role of bearing children. In their social reproduction role, women are given primary responsibility for the care and maintenance of family wellbeing, for example, nurturing, mothering, comforting, caring, and nursing both their children, the sick and elderly (Kabeer, 1992:7). Momsen (1991:28) identified specific social reproduction roles as housework, food preparation and caring for the sick, tasks which are usually more time-consuming in the Third World because of a lack of time-saving appliances and services such as electricity. Reproductive roles of women include all unpaid domestic work such as

the collection and transportation of firewood and water, and the production and preparation of food for the family.

The increasing involvement of women in economic production has had its impact on women's reproductive roles. Child care and domestic work are considered women's work in many Third World countries and if one is employed in the formal labour force, her responsibilities and tasks become more complicated. For example, Moghadam (1990:33) noted that:

> *In the past 15 years, economic recession and the technological revolution in the industrial countries have rendered many women's economic position precarious. Although, women's right to employment is now fully recognised, the cultural and institutional support to enable them to exercise this right is still insufficient if they have children. Now that there is great competition for employment, their situation is even more uncertain.*

The great responsibility women have as mothers has influenced their position in the workforce. As Momsen (1991:29) noted:

> *It is increasingly being realised that the task of reproduction is a major determinant of women's position in the labour market, the sexual division of labour and the subordination of women. The household is the locus of reproduction so that social relations within the household play a crucial role in determining women's role in economic development.*

Friedrich Engels (cited in Momsen 1991:29), a close associate of Karl Marx, "saw reproduction as the key to the origin of women's subordination by men". Momsen (1992:29) also noted that development has not brought greater freedom for women and in many cases women are now expected to carry the double burden of both reproductive and productive responsibilities.

3.3.3 Community Management Roles

The third role of women identified by Moser was the community management role. Community management work basically involves women's cooperative work in the community, including collective aspects of production and consumption (Kabeer, 1992:7). Momsen (1991:99) and Moser (1989:1801) argued that, because women tend to be more aware of the needs of communities, they often take the lead in carrying out community improvements. In communities where basic services are minimal, often women attempt to provide them. For example, women may assume responsibility for tidiness of the village, the cleanliness of the water supply and the maintenance of village roads and gardens. All of this work is done without pay, although it benefits the whole community. As Moser (cited in Kabeer, 1992:10) described, men also do community management work, but:

> *...women tend to be located at the level of unpaid production and provision, often within informal associations, while men are more likely to be located in remunerated leadership positions in more formal constituted community organisations.*

Community management work provides the basis for the wellbeing of the society or local communities as a whole and as such it requires a continuous commitment from women. As addition, Moser (1989:1801) noted:

> *Women, within their gender ascribed role of wives and mothers, struggle to manage their neighbourhoods. In performing this third role they implicitly accept the sexual division of labour and the nature of their gender subordination.*

3.3.4 Gender Roles and Planning

As described by Moser (1989:1801), the three primary (productive, reproductive and community management) roles of women are sometimes not recognised by authorities when planning processes of development. For example, women's work, especially in reproduction and community

management work, which is seen by men as women's natural role and as non productive, is considered to have no value (Moser, 1989:1801). This perspective results in serious consequences for women as their work becomes invisible and they become more disadvantaged in development. As described by Cox (1986:30):

> *Women's work is not recognised in official planning, actual implementation or final evaluations. It is invisible and therefore infinitely exploitable as a subsidy for export production.*

In addition, Momsen and Townsen (1987:42) stated that:

> *Reproductive activities performed within the household are simply not counted, and much of women's work is therefore concealed.*
>
> *Women may spend all or part of their adult lives as 'economically inactive homemakers' or may be 'economically active' but invisible.*

Thus women's roles tend to constrain women from actively directing and benefiting from processes of development.

In summary, recent changes brought about by the introduction of capitalism and Western social and political systems have not, overall, improved the roles and status of women in Third World societies in relation to that of men. Only a very small proportion of women, both in urban and rural areas, are able to respond positively to the changing economy through participation in education, employment or civic activities. The majority of Third World women, particularly in rural areas, are less well educated, less mobile and have far fewer opportunities for obtaining paid employment. Their cultural background and particularly their commitment to household production and reproduction roles places them in very disadvantaged position in the modern capitalist economy.

Many development projects have failed to reach and benefit women for the reasons discussed above. Thus the second part of this chapter focuses on the concept of empowerment as a tool to encourage women's equitable participation in development and to ensure that they share in the benefits of development.

3.4 Theories of Empowerment

In many developing countries, attempts by governments and other external agencies to bring development to rural areas - where, often, the majority of the population lives - have been very difficult and in many cases unsuccessful (Momsen and Townsen, 1987:16). Many development projects aimed at improving the living standards of disadvantaged groups of people have not achieved their goals. The mainstream model of development which promotes a top-down approach has been proved ineffective in bringing development to the grassroots level (Friedmann, 1992:46). Women, as the most disadvantaged social group in many societies, are given the least attention, are consulted least, and thus are the least represented in development initiatives which are planned.

If development has not benefited many women or other disadvantaged sectors of Third World societies to date, the following questions must be addressed. What is the best possible way to bring development to the disadvantaged population? How can women's subordination be alleviated? How can women's pride, status and their quality of life be improved? In an effort to address these issues, Friedmann (1992) suggested an alternative approach to development that focuses on the needs of disadvantaged people. Empowerment and public participation have been suggested as the best strategies if meaningful development is to occur for all.

The principles provided by the NGO Conference Report in 1987 involved ways in which people can be empowered by:

> *...permitting the poor to reacquire the power and control over their own lives and the natural and human resources that exist in their environment; strengthening the*

inherent capability to define development goals, draw up strategies for self-reliance and be masters of their own destinies; refusing to compromise on issues related to the social and cultural identity of (poor) societies; placing special emphasis on and attention to utilising and developing the indigenous efforts, however small, that are promoting self-reliance; uncoupling from development processes all aid which is intrinsically tied to the foreign policies of donor states; and recognising that all development efforts must have as equal partners women who have until now borne the burden of the anti-development process (NGO, cited in Friedmann, 1992:72).

This suggests that any alternative approach to development must involve the empowerment of women.

It is a common practice in many Third World societies that the rights of women are deliberately overlooked or are not taken into account by the government authorities and policy makers in the process of initiating development projects. The struggles of women to be recognised as equal to men are ignored in many cases due to a strong attachment to certain traditions and cultural values. This may even occur in the context of matrilineal societies where traditionally women had higher status in terms of land ownership and property rights (Emberson-Bain, 1994:50). For reasons of justice and equity, women must be accorded the same rights and power to participate in all forms of development.

3.4.1 What is Empowerment?

According to Friedmann (1992), empowerment is an alternative approach for power distribution amongst peoples in a society. The concept of empowerment was developed as a result of the failure of the mainstream model of development to reach people at all levels. Empowerment is aimed at people who are marginalised, who are always forgotten, who are looked down upon, who are illiterate, or who are rarely given the opportunities to make decisions for themselves. The aim of empowerment, as identified by Friedmann (1992:31), is to recognise the rights of all peoples

(especially the disadvantaged), to give them more autonomy over their lives and to give them the opportunity to participate in policy making and planning processes of development (Friedmann, 1992:11). As described by Friedmann (1992:vii):

> *The empowerment approach, which is fundamental to an alternative development, places the emphasis on autonomy in the decision-making of territorially organised communities, local self-reliance (but not autarchy), direct (participatory) democracy, and experiential social learning.*

Empowerment, as argued by Friedmann (1992:33,75) is to replace neither the existing mainstream model of development nor the current holders of power but to transform them both so that it is possible for the disadvantaged sectors of society to participate in political and economic development as well as having their rights as citizens and fellow human beings acknowledged. The process of empowerment opens the door for the disadvantaged social groups, like women, to be involved in all aspects of development. Women can improve their status and roles within their communities if they are appropriately empowered (Friedmann, 1992:34).

Karl (1995:14) adds that empowerment is a process that can be developed through time. It cannot be seen as something that can be given or transferred to any person. Empowerment can be developed by individuals or groups of people in their quest to bring about change. It is a process where each person has a legal right to participate as an individual or collectively in political and economic development (Karl, 1995:14). As summarised by Karl (1995:14):

> *Empowerment is a process of awareness and capacity building leading to greater participation, to greater decision-making power and control and for transformative action.*

Without people's consent - in their rights to make decisions over their lives - people may not put their whole heart into an externally engineered development project. If people's will and energies and active collaboration are not enlisted, nothing of lasting value can be accomplished. Robert Chambers (cited in Friedmann, 1992:105) argues that development "must be with the people rather than for them".

3.4.2 Women and Empowerment

Several writers have paid specific attention to the need to focus on women's empowerment. Their ideas are now presented. Karl's (1995:vii) opinions on women's empowerment are based on the idea of "participation as part of a process of empowerment that can lead to a greater decision-making power and the transformation of society through the inclusion of women's priorities and perspectives". It is believed that if women are involved in decision-making about the process that is shaping their lives, they will "make society more responsive to the needs of all the people" (Karl, 1995:1) and if the "status of women and girls is raised, it will improve the economic and social development of countries" (Karl, 1995:1).

Karl (1995:1) further argues that if women's empowerment is to be achieved, a radical change in the distribution of power and control between men and women must come about beginning from the household level where the future status of women lies, to the work place, and in government institutions. As Karl (1995:3) described, "women's status in the household also affects their ability to participate outside the home". For example, the secondary status of women in the household frequently prevents or limits them from participating fully in external development.

Vanessa Griffin (1987:117), when attending a workshop of Pacific women, entitled, 'Women, Development and Empowerment', defined empowerment as:

> *Having control, or gaining further control; having a say and being listened to; being able to define and create from a women's perspective; being able to influence social*

choices and decisions affecting the whole society (not just areas of society accepted as women's place); and being recognised and respected as equal citizens and human beings with a contribution to make. Power means being able to make a contribution at all levels of society and not just in the home. Power also means having women's contribution recognised and valued.

In Griffin's (1989:118) view, empowerment of the powerless groups of people such as Pacific women should include a greater autonomy for them in terms of having a voice in the society and being able to make contributions towards development.

Moser (1989) based her argument about women's empowerment on oppression of the women's population. Moser identified that the oppression of women is experienced differently depending on the sort of culture they have, their race, class, colonial history, and the society they live in. For empowerment to be firmly established, Moser (1989:1816) argued that government and policy makers and other civil authorities should acknowledge the need for the transformation of oppressive structures including "laws, civil codes, systems of property rights, control over women's body, labour codes, and the social institutions that underwrite male control and privilege". Moser emphasised the bottom-up approach whereby changes needed to begin from the grassroots level working their way up. Women at the grassroots level needed to be conscious of their rights to challenge their subordination. She noted that women's organisations can play a strong role in this regard by working towards "political mobilisation, consciousness raising, and popular education" (Moser, 1989:1816) and women's social and political empowerment. Women's organisations can become a political pressure group to push for recognition of women's interests in both social and political organisations. Furthermore, it is evident that women working with other women on projects they found empowering, for example, in production cooperatives, political movements, or mutual support groups, can accomplish a great deal more than a single woman acting alone (Friedmann, 1992).

3.4.3 Power and Empowerment

Basing my argument on Rees' (1991) theory of empowerment, power is seen as a means of achieving empowerment. Empowerment cannot be separated from politics, because in politics, power is used primarily by state representatives to manage people and resources as efficiently as possible and those representatives are called on to provide communities with a service with the view to achieving empowerment. However, Rees (1991) stated that attention to politics should hint at the process of enabling people to replace powerlessness with some feeling of control, and should not involve controlling agendas and people, or maintaining relationships of domination and subordination. Rees (1991) believes that the process of empowerment should instead involve two related objectives: the achievement of more equitable distribution of resources and non exploitative relationships between people, enabling them to achieve a creative sense of power through enhanced self-respect, confidence, knowledge, and skills.

The objectives of empowerment should contribute to social justice, a crucial goal in social policies designed to give people security to achieve greater political and social equality. Some of the powerless groups who would benefit include vulnerable people, migrants who experience a culture clash, and women who are continually suppressed. In her understanding of oppression, Moser (1989:1815) explained that:

> *While empowerment acknowledges the importance for women to increase their power, it seeks to identify power less in terms of domination over others (with its implicit assumption that a gain for women implies a loss for men), and more in terms of the capacity of women to increase their own self-reliance and internal strength.*

This approach discourages any further subordination of other people. It promotes the balance of power between women and men in all societies and other governmental institutions. Moser's argument emphasises that everyone, regardless of sex and age differences, should be given the

right and opportunity to determine what is best for their lives and to have a say in any decision-making process. Women as well as everyone else should have the right to make their own decision over their own bodies, their lives, household matters, and over any progress towards a better standard of living.

3.4.4 How Can Empowerment Be Facilitated?

As a process, the concept of empowerment has to have a strong base in the core of the society: the family or household (Karl, 1995:1). Friedmann's (1992:31) framework of empowerment is primarily based on household as the starting point of alternative development. Household is defined as a "residential group of persons who live under the same roof and eat out of the same pot" (Friedmann, 1992:32). Household is important in a sense that it is also a polity where civil society begins. Household is a simple political unit where thinking capacities of household members are developed and decision-making processes over the household management are built (Friedmann, 1992:32). Household is identified by Friedmann (1992:47), as "the starting point in the production of life and livelihood" and it can also be a starting point in shaping an individual's psychological, social and political power. As described by Friedmann (1992:47):

> *Households are miniature political economies that have a territorial base (life space) and are engaged in the production of their own life and livelihood. Households are political because their members arrive at decisions affecting the household as a whole and themselves individually in ways that involve negotiating relations of power.*

Therefore, conflicts internal to households over questions of power, for example, who does what kind of work, who controls what portion of whose income, and who should count in decision-making, indicate that households can be a good foundation for social and political empowerment (Friedmann, 1992:32,47). As discussed earlier in this chapter, in many societies of the Third World men and women are accorded different roles and status. Within the household, women often have

a lower status than men and men make most of the decisions. How can women be empowered given this situation? Basing his argument on the household as a polity, Friedmann (1992:33) identified psychological, social and political power within the household as the primary sources of people's power-base.

Friedmann (1992:33) described psychological power as an individual sense of potency. It is important that individuals develop a strong mental capacity and thinking ability to be able to reason out things and more importantly, to develop a strong sense of self-confidence and self-esteem. Strong psychological power for an individual is the stepping stone to better and stronger social and political power. As argued by Friedmann (1992:33):

> *An increased sense of potency will have recursive, positive effects on a household's continuing struggle to increase its effective social and political power.*

Women, in particular, have a great need to build up their psychological power within the household. Women are continuously oppressed because they have weak psychological power. They often lack the confidence and will power to think for themselves, to make decisions, to face challenges and to deal with the competitiveness of men. Psychological power could be the primary stepping stone for women at the household level to develop stronger social and political power.

Friedmann (1992:33) describes social power as having "access to certain 'bases' of household production, such as information, knowledge and skills, participation and social organisations, and financial resources". For people to get social power they need to have access to all these social bases of power. The productive wealth of a household depends very much on the social power of the household members. The confidence women gain from psychological empowerment will make it more effective for them to gain social power. For instance, access to wider information flows will broaden their networks with other women; more knowledge and skills will broaden understanding of development options available to them; more participation in social organisations will strengthen

and build their confidence; and access to financial resources will help fund materials and other necessary items for small-scale projects. When women's psychological and social power are firmly established, then they can go about competing with and challenging men for political power. In the same manner, an effective political power can only be achieved through a strong psychological and social foundation. Friedmann (1992:34) concluded that:

> *...gains in social power must be translated into effective political power, so that the interests of households and localities can be effectively advocated, defended, and acknowledged at the macrosphere of regional, national, and even international politics.*

In political power, Friedmann (1992:33) emphasised access of individual household members to the decision-making process. Everyone in the household has a right to live and at the same time has the same right to make decisions over their own lives. Therefore, the power to make decisions must neither be concentrated on one single person nor a group of people but available to everyone in the household, regardless of sex and age differences. This means that the views of household members must be considered and acknowledged before any decisions over family matters are made. Women's potential must be acknowledged too and they must be involved in all decision-making processes. Access to political power in the household will build women's confidence to participate in broader social and political organisations in the community and the society as a whole.

Friedmann (1992:33) argued that when individuals are empowered (psychologically, socially and politically) at the household level they build a strong foundation or power-base that can see them participate fully in the social, political and economic development of their societies. Women, as a vulnerable and disadvantaged social group, must have the three bases of power firmly established within them. Given full voice and equal power within the household, women will increase their "sense of self-confidence which comes, in part, from conquering a fear of acting outside culturally sanctioned (patriarchal) or state-imposed norms" (Friedmann, 1992:34). Success in establishing a

power-base can, therefore, help build women's self-confidence, strengthen their organisations, and encourage their cooperation to achieve their primary goals - equal participation and equal representation - within the household, the community, the employment sectors, and the political arena within their country. As described by Friedmann (1992:33):

> *Alternative development must be seen as a process that seeks the empowerment of households and their individual members through their involvement in socially and politically relevant actions.*

Basing his argument on what Friedmann identifies as the three major problems of the world - poverty, unemployment and inequality - development cannot be acknowledged as development if these problems are getting worse, "even if per capita income doubled" (Friedmann, 1992:1). In other words, development in its real sense is meant to benefit the majority of the people, to help improve living standards of the majority of the people.

Considering the mine on Lihir, therefore, which is to be discussed and analysed later in this thesis, if it is seen as a form of development it should, first and foremost, benefit people on Lihir rather than just benefiting the government, or the coffers of multinational corporations investing in the development. This is what happened in Bougainville and a civil war broke out there as a result. Therefore, for development to achieve its primary goals, it is important that local people are involved - in planning, in providing labour, in management, and other such activities - for it is the local people who will directly benefit from or be negatively affected by the development. Any meaningful development will always engage and allow for people's participation. As Friedmann (1992:7) argued:

> *People are said to posses ultimate wisdom about their own lives. For many "alternative" advocates, the voice of the people cannot be in conflict with itself; it speaks truly.*

3.4.5 Looking Beyond Local-level Empowerment

Despite Friedmann's idea that localities and household are important areas where empowerment can establish strong roots (1992:47,52,77), he also notes that households cannot be relied upon entirely for the success of empowerment because local actions can be severely constrained by global economic forces, structures of unequal wealth, and hostile class alliances. Friedmann (1992:7) emphasised that, "unless these are changed as well, alternative development can never be more than a holding action to keep the poor from even greater misery and suppression".

Friedmann (1992:34) thus emphasises that the empowerment of individuals within the household cannot be possible if the government and other institutions do not provide the necessary strategic support. As stated by Friedmann (1992:7):

> *Local empowerment action requires a strong state. Without the state's collaboration, the lot of the poor cannot be significantly improved.*

Guiding policies over the whole empowerment framework must be established so that the alternative character of development is not destroyed in its early stages.

Friedmann argued that external agents must provide necessary support in ways that encourage the disempowered sectors of the society to free themselves of traditional dependencies; encourage women "to overcome their fear of becoming active in the communities in which they live, to acquire a positive self-image, to speak their mind confidently, to identify and support local leaders, and to seek cooperative solutions" (Friedmann, 1992:78).

3.5 Empowerment Framework

As discussed in Chapter Two, most indigenous people, and particularly indigenous women, are somewhat marginalised by processes of development. They are socially and politically weak and this constrains them from participating in decision-making processes concerning major development

projects such as the mining project on Lihir. Therefore, according to theories of empowerment, women and other vulnerable or disadvantaged groups of people should be given special attention in all aspects of development. They must be given the opportunity to participate in development by determining the direction that development takes, controlling the impacts it has on their lives and sharing in the benefits of the development, in this case mining. Their living conditions and quality of life should improve with all aspects of development occurring within their geographic boundaries. They should be treated as active agents of the changes rather than 'passive beneficiaries'. Until the voices of disadvantaged groups of people are taken into consideration by those planning for development, they will continue to be burdened by its impacts.

I found it useful, therefore, to develop an empowerment framework (Table Five) which can be used to assess whether or not women are being empowered by a development initiative. My framework is based on the ideas of Friedmann (1992), Moser (1989) and Karl (1995) who all agree that power, wealth, and opportunities for social, political and economic development should be shared equitably between all peoples in a society. They also specify that socially and economically marginalised people, such as women, should have the opportunity to benefit from participation in development.

My framework is focused on psychological, social, political and economic empowerment. This framework should be used by planners and policy makers to evaluate whether or not disadvantaged groups of people such as women are participating equally in and benefiting from development. The framework is particularly important in that it will provide planners with the right kind of base to build on and a direction to follow. If endorsed by appropriate authorities, the framework could also provide a concrete document which women and other disadvantaged groups of people could use to state their case for better treatment with regard to psychological, social, political and economic development.

Table Five: Simplified Framework for Determining Women's Empowerment

Aspects of Empowerment	Indications of Women's Empowerment	Indications of Women's Disempowerment
Psychological	. Optimism	. Negativity
	. High self-esteem	. Low self-esteem
	. Strong self-confidence	. Weak self-confidence
	. Faith in other women's abilities	. Distrust amongst women
Social	. Strong women's organisations	. Weak and divided women's organisations
	. High level of status in society	. Very low status in society
	. Freedom of movement and access to all development activities	. Controlled movement and restricted access to development activities
	. Strong communication between men and women at household level	. Weak communication between men and women at household level
	. Equitable share of work, both paid and unpaid, between men and women in the household	. Women being burdened with most unpaid work
Political	. Acknowledgement of women's groups by men and authorities	. Refusal to acknowledge importance of women's groups
	. Strong women's organisations addressing a broad range of concerns	. Weak women's organisations narrowly focused on sex role stereotypes, for example, home economics
	. Freedom of speech for women at community and higher level meetings	. Cultural norms constrain women from speaking their minds
	. Strong participation from women in decision-making processes	. Restricted or no involvement of women in decision-making processes
	. Equitable representation of women in decision-making bodies	. Absence of women's voice in decision-making bodies

Continued.....

Cont'd

Political	. Strong consultation with women in all matters affecting their communities	. Community meetings held but women are not explicitly asked to speak on issues of concern to them
Economic	. Favourable atmosphere created by business institutions for women to enter into business activities . Equitable wages for both men and women, especially in the same level of employment . Equitable say and control by wife and husband over family income	. Biased and discriminatory attitudes shown by business institutions which discourage women from entering business . Women earning lower wages than men, even though at same level with men in employment . Wife having no say and control over how family income is spent

Source: Based upon the ideas of Moser (1989), Karl (1995), and Friedman (1992)

Co-operation between authorities, stakeholders in development projects and all groups and individuals in the society who will be affected by the development is crucial for institutionalising this empowerment framework. Empowerment requires collective participation to be successful.

Of the four processes of empowerment, I consider psychological empowerment to be the most important starting point for disadvantaged women. For instance, before women can achieve social, economic and political empowerment they need a strong psychological power base. In other words, strategies are needed which will build up women's self-esteem and confidence levels. It is important that such strategies include ways to encourage authorities and men to recognise the value of women's roles and to support women in expanding their horizons. This should include, for example, acknowledging women's existence and encouraging them to express their views at the local level so as to build their self-confidence.

Approaches like effective non-formal education for illiterate or semi-illiterate women could help them achieve psychological empowerment. With confidence firmly built in them, women can then begin to achieve social empowerment through building strong women's groups, and good communication with their husbands which can lead on to a sharing of responsibilities within the household. Establishment of social power is the first step towards political and economic empowerment. As Friedmann (1992:34) describes, gains in social power can be translated into effective political and economic power, so that the interests of the marginalised peoples, as those of most Third World women, at the household level and in localities can be effectively advocated, defended and acknowledged at the macro-sphere of regional, national, and even international politics.

Political power concerns the access of individual household members to processes by which decisions, particularly those that affect their own future, are made. Political power is thus not only the power to vote; it is as well the power of voice and collective action (Friedmann, 1992:33). If women are to have a voice in the politics of their society cultural attitudes of many societies will have to change in terms of recognising women's knowledge and respecting women's opinions. Women on the other hand, will need more faith in themselves to be able to voice their ideas in public. In addition, awareness raising programmes need to be developed at local, regional and national level so as to stamp out bad cultural practices and stereotypical attitudes of men towards women in both social and political institutions.

Economic empowerment will be vital if disadvantaged groups of people, like Third World women, are to gain access to and share in the benefits which flow from development activities such as mining. For example, a lot of people who experience large scale development projects in their areas come to depend on money to meet all their basic needs. Women will be economically empowered if they can earn money and have control over it. Programmes could be designed to educate and train women in processes of budgeting and spending money so that they do not have to rely on their husbands all the time to budget for the family. In this way women can be able to earn and control family income.

It is assumed that a lot of good will come the way of women and other disadvantaged indigenous groups of people if the concept of empowerment is effectively adopted by those planning and implementing development projects.

3.6 Conclusion

Processes of development in developing countries have brought in many changes that have affected the lives of disadvantaged groups of people like women. Yet women were typically not involved in the decision-making processes concerning large-scale development projects such as mining. Thus development has often had negative effects on women's lives. For example, in terms of women's work, their triple roles (production, reproduction and community management) intensified with processes of development. In addition, the rapidly growing population in many countries of the Third World has further increased women's responsibilities in their productive and reproductive roles and at the same time decreased women's participation in politics and in economic production. Added responsibilities leave women neither the time nor motivation to pursue ambitious careers where they have to compete with men. Thus the participation of women in a wide range of processes of development has been impeded and they have not shared equally in the benefits of development (Karl, 1995:1).

In order to target groups of people disadvantaged by development, including women, an empowerment approach has been identified as an alternative to the mainstream model of development. Instead of the top-down approach of imposing development onto people, it promotes a bottom-up approach whereby the vulnerable and disadvantaged social groups of the society are given the opportunity to participate in planning and decision-making, concerning development initiatives. Women in particular are singled out as a disadvantaged group whose psychological, social, political and economic power at the household level needs strengthening.

However, empowerment at the local level alone cannot work unless government policy makers and development practitioners give their support and draw up favourable guidelines to effectively

facilitate its implementation. The empowerment framework discussed in this chapter could provide a useful tool for government officials and others who want to ensure that development initiatives have positive effects on local communities in general and women in particular.

To follow, Chapter Four discusses the methodology adopted for the fieldwork aspect of this research, a methodology which also attempted to be empowering for the research participants. Later chapters will discuss aspects of empowerment specifically with regard to the mining development on Lihir. The key question will focus around whether women are being empowered, or whether the mining development is further disadvantaging them.

CHAPTER FOUR: METHODOLOGY

4.1 Introduction

This chapter discusses my research philosophy, the research techniques I chose to use, and how the research went in practice. Data was collected using certain methods designed to get as much first hand information as possible to write a good report for the benefit of the communities in Lihir society and for my Masters thesis. It is essential to identify the best possible methodology to use when collecting first hand information in a society like Lihir, with its very strong culture, especially in the current situation where a large-scale mining development project has begun.

4.2 Critical Issues in this Research Project

4.2.1 How My Position Could Influence My Findings

As a Melanesian doing research in a Melanesian society, especially as a male in a matrilineal society where women have rights over land and property, I realised that there could be difficulties in collecting data. As a man from another part of Papua New Guinea, I felt that it would be extremely difficult to communicate effectively with Lihir women. In PNG, many societies have different cultures but there is a common attitude shared by all: men are very jealous of their women and would fight and kill for their women. Therefore, women keep their distance from outsiders or strangers and this makes it difficult for any male researcher to get accurate responses from women in societies with such a strong cultural background.

However, there are also some advantages I had. As a Melanesian, I could communicate easily in pidgin with the men and women. As a man from a society with a similar matrilineal background as Lihir, my prior knowledge and understanding of *kastom* (custom) helped a lot in avoiding discussions on very sensitive issues which may have offended women and caused trouble for myself. As a student, local women as well as men responded well to give information and offered help towards my accommodation and travel from one village to another. They were happy that I was a neutral

person who could write about their problems without influence from the mining company or the government.

4.2.2 Research Philosophy

My philosophy in this research was, by researching a large development project, to give myself the opportunity to study and understand the problems faced by women, something that most men refuse to be concerned with, which contribute to their subordination and disempowerment.

My research could be beneficial in that it will highlight problem areas which the male dominated society refuses to acknowledge. In the context of this study, this meant I would seek the views and opinions of Lihirian women, especially those living in villages because they often lack the opportunity to gain positions of power, to participate in decision-making, negotiations and agreements on land matters, and they lack the opportunity to benefit from many development activities. I realised, however, that because of the constraints noted above, especially my being a man, I had to plan carefully how I would collect information for my research.

4.3 An Appropriate Approach To Research

4.3.1 Qualitative research method

I decided to focus on qualitative research as the concept of qualitative research method (QRM) is significantly focused on the quality of information collected. This is a different research method compared to the more scientific quantitative method which relies heavily on figures, measurements, counts and amounts of things (Berg, 1995:3). As described by Berg (1995:3), QRM basically "refers to the meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things". With research studies focusing on human societies and social settings of people, QRM is particularly valuable in learning, understanding and generating fundamental facts about the reality of a situation at a certain stage. As described by Berg (1995:7), this can include techniques which examine how certain people learn about and make sense of themselves and their lives. This involves learning about people's surrounding through symbols, rituals, social structures, social roles, and

traditional lifestyle. Therefore, because I had little background knowledge about Lihir society, I felt QRM would be valuable as a pathway to get quality information about Lihirian social settings, culture, lifestyles, and the sensitive issues concerning gender dynamics of power in the society.

Qualitative research can include participant observation, interviewing, photographic techniques (including videotaping), historical analysis, document and textual analysis, and ethnographic research (Berg, 1995:3). The main techniques I chose to use in my field work are described below after a discussion of the participatory approach I chose to adopt.

4.3.2 Doing Participatory Research

Many researchers following the qualitative research method when studying developing countries have found it useful to take a participatory approach. As described in Chapter Two, development in many Third World countries does more bad than good to indigenous and disadvantaged groups of people in a society. Most affected are women and the poor. As identified in Chapters Two and Three, one of the main reasons for this is that these people lack control over the process of development in the first place. They have been deliberately neglected, ignored, and overlooked by authorities concerned. Under the top-down approach to development, marginalised people's views and priorities are not considered. Similarly, some research methods in the past were only concerned with getting as much information from research subjects as possible without giving them a chance to learn from the research process. Such an approach has compounded the marginalisation of some groups of people and, because they have not had a chance to comment on the findings, the legitimacy of the findings may be questionable.

Today, many development agencies are changing their approach and are looking at alternative ways of working with people at the grassroots level. In the same line, modes of research have also changed and are directed "towards participatory appraisal and analysis in which more and more activities previously appropriated by outsiders are instead carried out by local people themselves" (Chambers, 1992:1). This type of approach is supported by the PRA school of research which

"enables rural people to share, enhance, and analyze their knowledge of life and condition, and to plan and act" (Chambers, 1992:1). A participatory approach encourages the suppressed and powerless people, for example, the women in Lihir society, to take part in investigating the root causes of their subordination and to make their own analysis of what possible actions to take. As Gaventa and Lewis described, this research method should also "enable underprivileged communities to gain confidence in their own knowledge and abilities", and to use it in ways that can help alleviate their disadvantaged position (cited in Chambers, 1992:3).

Participatory research encourages an open dialogue between the researcher and research subjects and in the process increases "people's awareness and confidence, and empowers their actions" (Chambers, 1992:2). As the Frierian theme describes, "the poor and exploited people can and should be enabled to conduct their own analysis of their own reality" (Chambers, 1992:2). The local people know what is best for them and it is in the best interest of their society that they are aware of what is happening around them and given the opportunity to take action. In the case of Lihir, a participatory research approach will be appropriate because it will encourage Lihirian women to share their views over the impacts of the mining development and what they think is the best action to take concerning their involvement.

As described by Mosse (1994:498), PRA techniques are more suitable to generate information at the community level with direct interaction from members of the community. The techniques used in PRA can give disadvantaged groups of people the opportunity to enter into group discussions between themselves, to express their views over important issues, and often to plan and take action.

Participatory research thus makes it possible for a two way learning process to occur. The researcher learns more about the local people in the process of obtaining important information about them. As described by Chambers (1992:19), the activities of researchers are:

.....to establish rapport, to convene and catalyse, to enquire, to help in the use of methods, and to encourage people to choose and improvise methods for themselves. We watch, listen and learn.

On the other hand, the local people learn about themselves and are encouraged to interact, plan and participate in issues concerning their wellbeing.

A participatory approach to research creates an atmosphere where research participants are free to express their views about the developments happening. This is also appropriate for women in Lihir who have low literacy level and whose culture had suppressed women for generations so that they hardly ever express their views publically over an issue.

4.3.3 Cultural Practices and Research

In addition to choosing to use qualitative research methods and adopting a participatory approach to field work, I feel it is important to consider cultural practices which can influence the collection of data. In short, in obtaining information from local communities I have chosen to respect cultural systems of socialising and interaction between individuals and different groups of people in the society concerned.

As an example, I will use the traditional system of sharing and chewing *betel nut*[15] with Lihirians during my fieldwork. It is socially important to carry *betel nuts* around with me to greet those I meet for interviews. Culturally, *betel nut* sharing and chewing is an important part of socialising in many coastal societies in PNG and it carries many meanings such as friendship, peace, good faith, liveliness, gathering, and importantly, it makes people a bit more relaxed so they can converse more freely. *Betel nut* is always shared during meetings, feasts, funeral gatherings, and many other important occasions in Lihir society. Therefore, it is an important key for socialising which can be

[15]A tropical nut, found in some tropical countries like PNG, Solomon Islands and Malaysia. In PNG, it is chewed with powdered lime, made from sea shells, and mustard seed to make the content go red. It gives the person lively feelings within the body.

used as a tool for creating a good atmosphere to gather information, share views, tell stories, and discuss culturally sensitive issues with local Lihirians. Importantly, *betel nut* is chewed extensively by both men and women in Lihir. The advantage about following this practice is that it will create an atmosphere of open dialogue with research subjects, thus enabling information to flow more freely and efficiently.

PRA and qualitative research methods allow for the researcher to actively incorporate cultural practices in their research.

4.4 Research Framework

In the following section I will discuss the research techniques I chose to adopt as well as how the techniques went in practice, including problems encountered and the lessons learnt from the fieldwork.

4.4.1 Research Techniques

The specific techniques I have chosen to adopt draw upon the participatory and qualitative methodology and participatory approach discussed above. There are two components to my field research: primary and secondary data collection. The secondary data collection will involve collecting published and unpublished materials from libraries, non governmental organisations (NGOs), relevant government ministries (Ministry for Youth and Home Affairs), and other concerned organisations like the national council of women (NCW) on women and development in PNG and problems commonly faced by women constraining them from participating in certain development activities. I will also organise meetings with leaders of these organisations so as to get proper insights into their position on the issue of women in development and to get logistical advice and feedback from them.

Primary data collection will involve field work and first hand contact with research subjects on Lihir island. I intend to use certain techniques to get information from local Lihirians, the government

agents and LMC authorities on the island. Considering the fact that a researcher must be patient with research subjects while at the same time knowing that the time frame for the research is limited, specific field research techniques are sought in situations like this to obtain the best possible results. In line with this, and the methodology discussed previously, I have identified a number of techniques: participant observation, ranking, stimulus pictures, mapping, stories and portraits, workshop, and interviews.

4.4.1.1 Participant Observation

Participant observation is an important technique in that it includes the researcher taking part in normal village life, attending church gatherings, holding casual conversations with local people, and participating in any other activities which characterise the lives of the people. In order to really experience and understand the kind of behaviour, attitudes, and traditional lifestyles of Lihirians, I, as an outsider, will have to live their lives and do what they do. It is likely that through this process the Lihirians will feel more comfortable with me, thus making my research less alien to them. As stated by Kabayashi, "this is not to say that my subjects are part of my project, but that I am part of theirs" (cited in Staeheli and Lawson, 1994:98). In addition, David and Chava Nachmias (1976:91) described that participant observation allows for a better appreciation of reality while in the process of sharing life experiences of the persons being observed.

The main aim of using this technique is to get first hand insights of traditional lifestyles of Lihirians and to understand Lihirian ways of doing things. This is important in that it will help me be as accurate as possible with the information I collect.

4.4.1.2 Semi-structured Interviews

Semi-structured interviewing is the technique I will be using most in the field. An interview guide consisting of checklists has been devised rather than using formal questionnaires (Appendix One). Target information is set within a larger context as this provides the opportunity for new and unexpected information to be obtained by chance. The interviews will be informal and

conversational in most cases, but carefully controlled. This style of interviewing encourages both the researcher and research participant to share in the communication process which can build a deeper relationship and a greater understanding of each other over issues of concern.

My interviews will involve both individuals and groups. My intention to interview groups of people is particularly aimed at Lihirian women, whom, I have been told, will often participate in interviews when in a group. I regard collective group interviewing as an important way for gaining accurate knowledge of village situations and views over an issue. Regarding the collective interactions of individuals within the village community, it allows more access to a wider body of knowledge than would individual interviews. Furthermore, most village communities in PNG have traditionally lived and done things collectively or as a group thus it may be more appropriate to conduct interviews within a group context. In addition, because of the inappropriateness of an unmarried man such a myself being alone with any women, it will be appropriate to use group interviews in order to get information from women.

Nevertheless, I will also conduct my interviews with individual persons when the opportunity occurs, both with men and with sufficiently confident women in appropriate settings (such as in an open office where others can observe our interviews). This will be useful in some circumstances to (a) discuss sensitive issues, for example, regarding gender relations, which some persons may not be willing to discuss in front of a group, and (b) cross-check information gathered using group interviews.

4.4.1.3 Ranking

The technique of ranking is also a good way of obtaining simple, but important information from villagers. The results can be used to analyze their views over an issue. I will use this technique by discussing likely positive and negative impacts of the gold mine project with Lihirians and using the results or their ideas to design picture cards which will be distributed to individuals or groups of men and women whom I am interviewing. They will then discuss and rank the cards in order of

importance. A record of their opinions and preferences over the impacts will then be noted. A simple analysis can be drawn using the ranking technique and an argument may then be developed.

This is a simple way of helping everyone to participate and make contributions to my research. The aim of using this technique is in particular to get Lihirian women, who are usually very shy with outsiders, to feel they are a part of my research and enjoy the interview sessions. It is also appropriate as it can be used with both literate and illiterate men and women. A lot of feedback from research subjects is expected to occur using this technique.

4.4.1.4 Stimulus Pictures

In this technique, I intend to show pictures of essential services like health, education, transportation, communication and water supply to groups of Lihirians I will be interviewing. In using the picture cards, I hope to get their reactions and expectations on what services they view as important and which services they feel need to be improved by the mining company, Lihir Management Company (LMC). A general analysis of their overall expectations, taken from different groups, will be made and then compared with LMC's plans to see whether or not LMC have the same ideas and whether it is likely that Lihirians' expectations will be met.

The technique is very simple and I hope to get a lot of essential information from it. Like the ranking technique, the aim is to get everyone involved, especially the very shy women who hardly talk in front of outsiders.

There could be one problem with this technique, however, in that it could unrealistically raise people's expectations about the benefits the mining development could bring to their society and their lives. Evidence has shown that local people can sometimes make unrealistic demands, as discussed in Chapter Two, about compensation demands and other services. However, I plan to carefully explain my use of this technique to avoid misunderstanding.

4.4.1.5 Mapping

The technique of mapping will only be applied to villages in the directly affected area which are currently going through a lot of physical changes. Both men and women will be involved in this technique to draw separate pictures of their village before the mining development on the island and at present.

The aim is to help identify the rate and kind of changes the villages have been going through since the mining development started. Furthermore, the involvement of men and women drawing different pictures will help me identify and understand their different views and priorities concerning the impacts on different things like land, fruit trees, and other essential crops used extensively by Lihirian households.

4.4.1.6 Stories and Portraits

As stated in Chapter One, the oral tradition has been an important part of life for indigenous peoples in PNG for generations and story telling is part and partial of the whole tradition. People tell a lot of stories about their experiences in life and about their links with their ancestors who settled them on the land and gave them their identity. As such, story telling will be an important technique to adopt which will enable me to learn more about traditional background of the research subjects and to understand their attitudes and behaviours concerning certain cultural issues of interest, for example, how traditional gender roles emerged.

4.4.1.7 Workshop

Workshops can be a good technique to verify information obtained from research participants. Workshops aim to bring all concerned parties together to review and make amendments to the information gathered. They also provide a means by which important information collected from different groups is refined, agreed upon and shared with influential people in the community: a way of checking up on the information and findings. This technique is a good way of clarifying information before it is officially documented.

I intend to conduct a workshop with Lihirian men and women, including LMC officials and villagers, to confirm my research findings before returning to New Zealand. The aim of this workshop is to verify my findings and to make Lihirian men and women, who obviously have very different perspectives of reasoning or doing things, share their views over the mining issue and discuss traditionally sensitive issues that may be affecting women's development in Lihir and that I may have missed in earlier interviews.

4.4.2 Time Frame and Recording Mechanism for Data Collection

A total of three months has been set aside to carry out the fieldwork. The first three weeks will be spent in the capital, Port Moresby, collecting background information including published and unpublished materials from relevant government ministries, NGOs, and libraries. This time will also allow me the opportunity to reorganise and make appropriate adjustments to my time schedule according to local conditions. A day or two will be spent in the provincial capital, Kavieng, before proceeding on to Lihir. At least two months will be spent on Lihir island.

My research is focused extensively on one particular society: the matrilineal society of Lihir island group. However, in order to gather the required information about Lihirian women's involvement in decision-making about the mine and the mine's impacts on their lives, it is necessary for me to travel and visit perhaps five to eight main villages on Lihir island group. It will also be necessary for some of these villagers to be in the area directly affected by the mining development, and others to be outside this area. I intend to stay for an average of five days in these villages to get the necessary information and a feel for the changes going on in people's lives because of the mining development.

A number of recording mechanisms are required for my data collection. I have decided to use the following items: diaries, note pads, dictaphone, camera, and video camera. I will be noting down incidental information about my experience of the field work each day in my diary and taking notes and summarising daily interviews in my note pads. Besides note pads, I will also use dictaphone to

record interviews so I can check through the information given after the meetings. A camera will be used to take photos of important sites and activities so as to support my arguments. In addition, I plan to use a video camera because I want to capture events like women's workshops, village daily activities, community work, feasts and celebrations, village arguments and disputes over land and property (if appropriate), and development activities taking place at the mine site.

I may not need translators in my interviews because I will be communicating with the people in *pidgin,* but I will need a trusted companion, preferably a respected elderly woman, to accompany me on my interviews with village women. This will help me in three ways: (i) to assist in further explaining my questions in the appropriate manner so that they understand and can give the appropriate answers; (ii) to give women the courage to discuss problems and issues freely; and (iii) to discourage any ill feelings or suspicions by the men towards me.

It is also important that I carry *betel nut* around with me to greet those I meet for interviews. As stated above, *betel nut* is culturally an important part of socialising in many coastal societies in PNG and I will be using it to socialise with Lihirians so they can converse more freely with me.

4.5 How the Research Went in Practice

It is an important part of any research process to reflect on how the research went in practice. The following is an account of how my fieldwork went in practice, for example, the actual implementation of the fieldwork plan, the techniques used and problems encountered, and my general experience about the fieldwork and, in hindsight, what I see as the right way to go about doing this kind of research.

4.5.1 Implementation of the Fieldwork Plan

Overall, my fieldwork went according to plan. This is despite a little difficulty I faced in getting myself across to Lihir island when I arrived in Port Moresby. In addition, adjustments had to be made to accommodate local conditions.

4.5.1.1 In Port Moresby

I spent a total of five weeks in Port Moresby, two weeks longer than planned, before I went to Lihir for the field work. Prior to arriving in PNG I did not realise that I had to obtain a special pass from LMC which would permit me to enter Lihir island. Just waiting for this permit pass held me back for an extra two weeks. Furthermore, bad weather in the New Guinea Islands region and a communication breakdown between LMC authorities on Lihir island and my liaison manager, Dr Colin Filer[16], in Port Moresby contributed towards the delay in obtaining the pass in time.

However, while waiting for the approval pass from LMC, I used the time doing background research and collecting secondary information from the University of Papua New Guinea (UPNG) library, the National Research Institute (NRI) library, and the Melanesian Environment Foundation (MEF) in Port Moresby. Dr Colin Filer, who works for NRI, helped and assisted me in obtaining a lot of published and unpublished material from NRI and UPNG library. As expected, Dr Filer who has worked as a consultant to LMC, also gave me some good insights and advice on what to expect, what to do and what to avoid during the process of conducting my fieldwork on the island. This proved very helpful in helping me to make adjustments towards local conditions when I actually did my fieldwork in Lihir.

Besides my meetings with Dr Filer, I also met and collected some information from Mary Toliman, the director of PNG's Melanesian environment foundation organisation in Port Moresby. Toliman assisted well in providing contact addresses for influential women leaders in Port Moresby who would be able to give me insights into women's issues. However, although I tried my best to contact and make appointments with them I never succeeded. One thing I learnt during this time was that it is so difficult to make contact with professional women in Port Moresby have very busy time schedules.

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[16]Filer was well known to LMC because he did a lot of consultation work for them and he was influential in convincing LMC authorities to allow me to do my field work on Lihir island. He was also very helpful in giving prior advice in what to expect while on the island.

Another problem I faced when collecting secondary information from UPNG library concerned the photocopy machines, many of which happened to be out of order during the weeks I was in Port Moresby. I ended up spending a large part of my days standing in a long queue in the library to photocopy relevant materials, using the only available photocopy machine. This exercise cost me a lot in terms of inconvenience.

4.5.1.2 In Lihir

On arrival in Lihir, I had some trouble trying to convince the security personal at Lihir airport that I was a student on my way to do my fieldwork on the island. I spent some hours at the airport before the government liaison officer, Gabriel Tukas, rescued me.

On Lihir I spent a total of five and half weeks, two weeks less than planned, doing my fieldwork. I visited and conducted my interviews with individual men and with women's groups in 11 main villages on Niolam island and two on Masahet island. These included villages in the directly affected areas like Londolovit, Putput 1 and 2, Kunaie and Kapit, and those outside of this area: Palie (Talis, Pango, Komat), Lamboar, Sali, Zuen, Ton, and Lakaziz. My programme started on Niolam island with the directly affected villagers. The first four weeks and the last three days were spent in Niolam villages and at the mining camp while the fifth week was spent on Masahet island.

My initial plan to visit five to eight main villages and spend an average of five days in each village was not possible because women from just about all the villages wanted me to go and meet with them in their villages. However, with assistance from LMC's community relations officers, Jacklynne Membup and Anna Tohiana, we managed to convince them to gather together in certain villages to meet with me. Dates were set for such meetings and many women turned up and participated in the interviews. Nevertheless, I visited more villages than expected, therefore, spending less days (an average of three days), in each village. On the other hand, my plan to get a respected elderly woman to accompany me was not necessary because arrangements were made by Jacklynne and

Anna with women leaders in each village to meet with me and introduce me to the other women. They were also helpful in organising places and times for our meetings.

In the villages, I stayed with men in the men's house *(hausboi)* and spent most of the days including the early part of the evening doing interviews, taking part in village activities like gardening, and feasts and sight seeing, taking photos, and telling stories with elderly men[17].

For my recording mechanisms, I used a dictaphone to record most of my interview sessions on the island. There were no problems with this and the sessions were quicker than expected. The participants did not mind being recorded and participated well. However, use of a dictaphone meant I had to work late at night writing down the important issues covered during the interviews. On the other hand, the diary was used to remind me of my appointments and to record special events of the day. The camera was valuable and I took a lot of photos of Lihirians, important sites, and the current mining development activities on the island. The photos came out very well and I will use some of them in this thesis to support my findings. The only recording mechanism I did not use was the video camera, which was not available when I needed it.

At the end of the fifth week of my research on Lihir, I conducted a day-long workshop at Potzlaka government station where the information gathered was reviewed, analyzed and evaluated by those who attended. Those who attended included nine women from Londolovit, Kunaie and Masahet island, and four senior officers from LMC's Community Relations Department (Anna Tohiana, Mesulam Aisoli, Leo Glaglas, and Dave Emery), an officer from Nimamar Development Authority (Eremas Tukia), and Dr Martha Macintyre, a social impact monitoring consultant hired by LMC. Many issues were raised and addressed but there would have been more interesting ideas presented if more Lihirian men and women representing different villages could have attended. However, those who attended participated well and helped in refining some of the information collected. Around the

[17]Having time with village elders and sharing stories about different issues concerning the mining development helped a great deal in identifying their opinions about the whole development and the changes taking place on their island.

time of the workshop I became sick with malaria and I left Lihir a few days later. I was sick for the remaining two weeks in PNG and was on medication when I got back to New Zealand.

Overall, I was happy with the outcomes of my fieldwork. First of all, LMC assisted me well in providing all necessary transportation facilities, information and accommodation at the beginning and the last few days of my fieldwork. In addition, I was given access to their office facilities including office space, stationary, telephones and facsimile to help me with my research progress. LMC's community relations officers, especially Jacklynne Membup, Anna Tohiana, Luke Kabariu, Mesolam Aisoli and their manager, Ray Weber, were particularly helpful with my research.

In the villages, Lihirians welcomed me into their houses and were anxious to get as much information from me, concerning my fieldwork, as I was from them. Although some Lihirian men looked at me with suspicion at first, I did not encounter any problems with them. After learning the nature of my fieldwork, many later on admitted that they were happy I was doing such research in their society. Most of the women participated well in the group interviews, as did the men I approached. In hindsight, it appears that the women responded a lot more openly to me than I had thought they would because they saw me as an authority figure, as someone with access to authorities, who could help to alleviate the problems they faced. In this way, being a man may have actually assisted in gathering information.

4.5.2 Techniques Used and Problems Encountered

Most of the techniques I chose to use were appropriate to the nature of my research and were applied well. The techniques I used most often were semi-structured interviewing and participant observation. Semi-structured interviewing was applied just about every day with women's groups and men in each village I visited. The checklist questionnaires at hand provided a good framework of questions which I always referred to when in the process of interviewing individuals and groups of people. Having flexibility in the interview schedule was particularly rewarding because it provided the opportunity for new and unexpected information to be obtained by chance.

Women were mostly interviewed in groups while men were more flexible and were interviewed individually. I set up formal interviews with women's groups, during the first two days of my arrival drawing up dates of my visits, with the assistance two Community Relations women's officers. These were sent out to women leaders in the 11 villages and those in neighbouring villages were notified and many turned up for the meetings. Women leaders in each village were given the responsibility of deciding the best times of the day for our meetings and I was to fit in with their timing. This was not a problem for me and I adjusted towards whatever time they preferred.

In terms of the best times for getting information from women, I learnt that most Lihirian women preferred interview sessions at night. Interviews at night with a group of women would usually be held at the woman leader's residence but they made sure the lighting was dim. Some women admitted that they felt more relaxed talking with me at night than during the day because they did not want me to look at their face or to identify who was talking. I actually interviewed women from Kunaie and Lamboar villages at night and even though a small number attended, they contributed very well. Another reason why women liked interviews to be held at night was that this is when they sometimes had a little spare time. During the day they were too busy gardening and doing domestic work. However, other women found night sessions impossible to attend because people are very suspicious of women going out at night without their husbands.

During the interview sessions I used to ask one question at a time and let the women have discussions over it before giving their answers. The questions were asked in *pidgin* and all those attending understood what was being asked because they all spoke the language. Usually, only one woman in the group gave the answer and explanations on behalf of the group. This approach went well for most of my interviews. However, I noticed that sometimes only a few women in the groups were active in discussing the issue while the rest seemed too shy or felt too restricted to talk in front of me. That is why sometimes when I asked a sensitive question I would pretend to read or do something else, for example, I would walk away from the group and chew *betel nut*, and come back a minute later when they were ready to reply.

Individual interviews were not set up in formal fashion. For example, for the case of Lihirian men, my interviews with them were done any where whenever I met them by chance and they had the opportunity to talk. However, most were done in *hausbois* at night. In the case of individual women, most of those I interviewed were wives of those men I stayed with. Many of these women openly expressed their views over issues concerning the current mining development that were affecting them. I tried my best to interview other individual women in the village but I never succeeded because they were restricted by certain cultural obligations and could not converse freely with a male outsider like me.

As stated above, while many women were too shy to express their views with me, others were very happy that a man was conducting such research. They had the impression that the information they gave would help them get out of their disadvantaged position in the future. The thing that struck me most during my interview sessions with them was their interest in wanting to know what I would do with the information I was collecting from them. I tried my best to make them understand that my research was strictly educational but I promised them that I would write a special report which I would send to LMC in the hope that they would act upon it. Lihir women were clearly interested in changing their disadvantaged position and they hoped that my research would, in some way, help to achieve this.

The technique of participant observation was of significance in a society like Lihir because it involved a lot more than asking questions and receiving answers from research subjects. This technique gave me the opportunity to understand the lifestyle of Lihirians and their ways of doing things. It helped me understand why Lihirian men and women acted as they did and why women never participated in major decision-making processes in the village and over the mining development. I used the time before and after my formal interviews with women to participate with families or men in activities like gardening, clan meetings, feasts, and telling stories. During this time I also observed and, in the process, asked relevant questions about why things were done in a particular manner.

Ranking and stimulus picture techniques were used in some villages at the end of my interviews with women. The good thing about these techniques was that they were simple and all the women participated in them. Both men and women were particularly encouraged in this case to talk and some of the very shy ones were able to say something during these sessions. Women and men's ideas about the positive and negative impacts of the mining development as well as the expectations of Lihirians on services and social development which could emerge from the mining project were well established using the technique. The two techniques were also used during the workshop and they proved very efficient in collecting valuable information from Lihirian women and men.

The technique of story telling and portraits was also applied and was one good way of getting information. Although I did not use the technique as often as those already mentioned, when used it gave me a lot of insights and background information about Lihirian people's traditional lifestyle and their lives before the mining development. For example, most of the men who took part in this technique talked about their economic situation before the mining development comparing it with the current standard. Unfortunately, only men were able to take part in this technique and women's side of the story was never heard because the cultural situation of the society only allows men to be free at all times to walk, talk, and tell stories with outsiders. More interesting stories would have been covered if women had the chance to talk to me with this level of detail. This is probably the biggest way in which my sex hindered my ability to collect information.

One of the most important techniques I used was conducting a workshop. Holding a workshop at the end of my fieldwork gave me the opportunity to summarise my findings to those present and to use their feedback to refine issues I was not so sure of. The workshop participants were initially divided into four groups according to sex, for example, all males in one group with women making up the other three, and asked made to discuss important issues concerning Lihirian women and their place in the mining development. The workshop went well but more interesting information could have been established had women and men from all the villages I visited attended.

The workshop did not only benefit me but also the village women and LMC's community relations representatives. For example, the women who participated had the opportunity to raise issues and learn from LMC's community relations department what their policies and strategies were concerning such issues, for example, alcohol. On the other hand, LMC's community relations staff had the opportunity to gain valuable information concerning women's issues on the island, information which would otherwise take a number of months to get to them from my report, and to make plans to properly address them.

The only technique I did not use was the mapping technique. This technique was supposed to be used by Lihirian men and women from the directly affected areas to identify physical changes to their villages and surroundings. Even though some women and men volunteered to draw maps and were given paper and pencils for this purpose, none of them made an attempt to draw the maps. Most gave the excuse that they were too busy with other work and forgot about it. This was unfortunate because a better picture of the current changes happening in the directly affected areas could have been represented had the maps been drawn. I never got the chance of following this up because I was sick with malaria for the remaining days after the workshop.

Overall, I was very happy with the techniques I used because they contributed well in exploring critical issues and gathering valuable information from both Lihirian men and women as well as from LMC and the government authorities on the island. There were really no major problems regarding the application of the techniques in the field and it seemed they were appropriate to the kind of society in Lihir.

While in Lihir I experienced that Lihirians were very hospitable and many warmly welcomed me into their homes when I was in their village. I was free to walk around in the village and to take photos, except for women who were too shy and said they did not wish for me to take their pictures. This cleared any doubts I previously had about whether the villagers would receive me warmly or not. These doubts arouse from an unfounded rumour that Lihirians were very protective over the

development of their gold mine and were suspicious and hostile to those who they thought could in its way. Along with the support I got from the villagers, LMC, the mining company, also gave me a lot of support and assisted me with most of my logistical requirements like transportation, accommodation at the mine site, and office facilities. My fieldwork in general would not have been as successful without their commitment and assistance. Their helpfulness was partly due to the fact that LMC was very keen to get more information about women's issues on the island and appropriately addressing them through LMC's Community Relations Department and its Society Reform section.

4.5.3 Lessons Learned from Fieldwork

During my fieldwork I had learned two major lessons: (a) researchers need a readiness to reorganise and adjust to suit local conditions and, (b) researchers must have a strong ability to maintain patience throughout the process of fieldwork. These two factors proved very important and my fieldwork could not have been successful had I failed to observe them.

Many times, researchers need to make adjustments to their time frame, techniques and other logistical requirements in the field so as to suit local conditions. For example, as discussed at the beginning of fieldwork, I spent two frustrating weeks, on top of the three weeks I planned to spend in Port Moresby, waiting for my permit from LMC authorities on Lihir island to be granted. This, together with my encounter with LMC security guards on my arrival at Lihir airport made me felt very discouraged from the start. My experiences from these incidents reminded me that it is not an easy task to conduct fieldwork in a country like Papua New Guinea, especially in a remote area like Lihir, even for a person from PNG.

In addition, a lot of patience was needed from me towards my research subjects. During my fieldwork I did not have any problems regarding my interview sessions with men because they were always eager to respond with answers to my questions and give explanations about issues I was interested in. Lihirian women, on the other hand, were not as quick to respond as men because of

the society's strong cultural background. From this experience, I learnt that a researcher must possess a strong ability to have patience when dealing with suppressed and vulnerable groups of people like women in Lihir society. As identified by Mandi Filer (1989), Lihirian women, especially young single women, are particularly shy and hardly have the courage to make known their views.

Although the approach I took was appropriate and valuable information on a large-scale mining development project on Lihir island and the impacts it had on the local people, especially the disadvantaged social group like Lihirian women was gathered, not all of my research went as well as planned. From what I learned I have devised a list of principles which may assist other researchers studying marginalised people in developing countries:

- be understanding and have a lot patience with the research subjects;
- be ready to reorganise and adjust to any changes that may suddenly occur;
- conduct interview sessions at appropriate times, especially to suit disadvantaged groups of people;
- do not try to visit too many villages; it may be better to visit fewer villages and spend more days in each village so as to get the opportunity to learn more about your research participants;
- techniques which encourage shy research subjects to take an active part in discussions should be devised, expanded upon and used whenever relevant;
- villagers must be assured that research of such a nature will benefit them in the long term;
- researchers should try to encourage more interaction between different research participants, in my case, villagers and LMC officials, as this can lead to good dialogue and can make the research participants realise that they are achieving something as well in the research process.

4.6 Summary

My research involved three months of fieldwork whereby primary and secondary information was collected. The success of my fieldwork was due to the qualitative methodology and participatory approach I used. They proved valuable and appropriate when applied in Lihir society, especially when gathering information from women who hold such a disadvantaged position in that society.

However, I learnt that appropriate research techniques will vary from one place to another and researchers adopting PRA and qualitative research methods should always make adjustments to incorporate local conditions and respect local traditions when gathering information.

The research techniques chosen particularly helped me in understanding the social settings of Lihirians, their lifestyle and their ways of doing things. In addition, the local people were given the opportunity to make assessments on certain issues, and to participate in analyzing the data I had gathered. The research process was good because it benefited all sides: the local community, the researcher (myself), and the government and LMC authorities in Lihir. It is hoped that my research will make Lihirians, especially women, be more aware of their capabilities, and the government and LMC authorities to plan appropriately to properly address problem issues regarding women's participation in the mining development.

The following two chapters describe the approval and initiation of mining development on Lihir, and the impacts of the mining development on women.

CHAPTER FIVE: APPROVAL AND INITIATION OF THE MINING DEVELOPMENT

5.1 Introduction

As discussed in Chapter One, Lihirian women are a disadvantaged group in Lihir society and have no control over the land, even though they have ownership rights to the land. Now this land is the subject of massive construction and infrastructural development. Gold was found on their land and agreements have been made with the Papua New Guinea government for the gold resource to be mined. Because Lihirian women traditionally inherited land and held ownership rights to it, it is important to find out whether they have taken part in the decision-making processes over the mining development.

The discussion which will follow will cover the participation of women in the initial decision-making about the mine, constraints on women's participation in decision-making, the current state of mining development on the island, and how LMC is addressing gender issues.

5.2 Participation of Women in the Initial Decision-making About the Mine

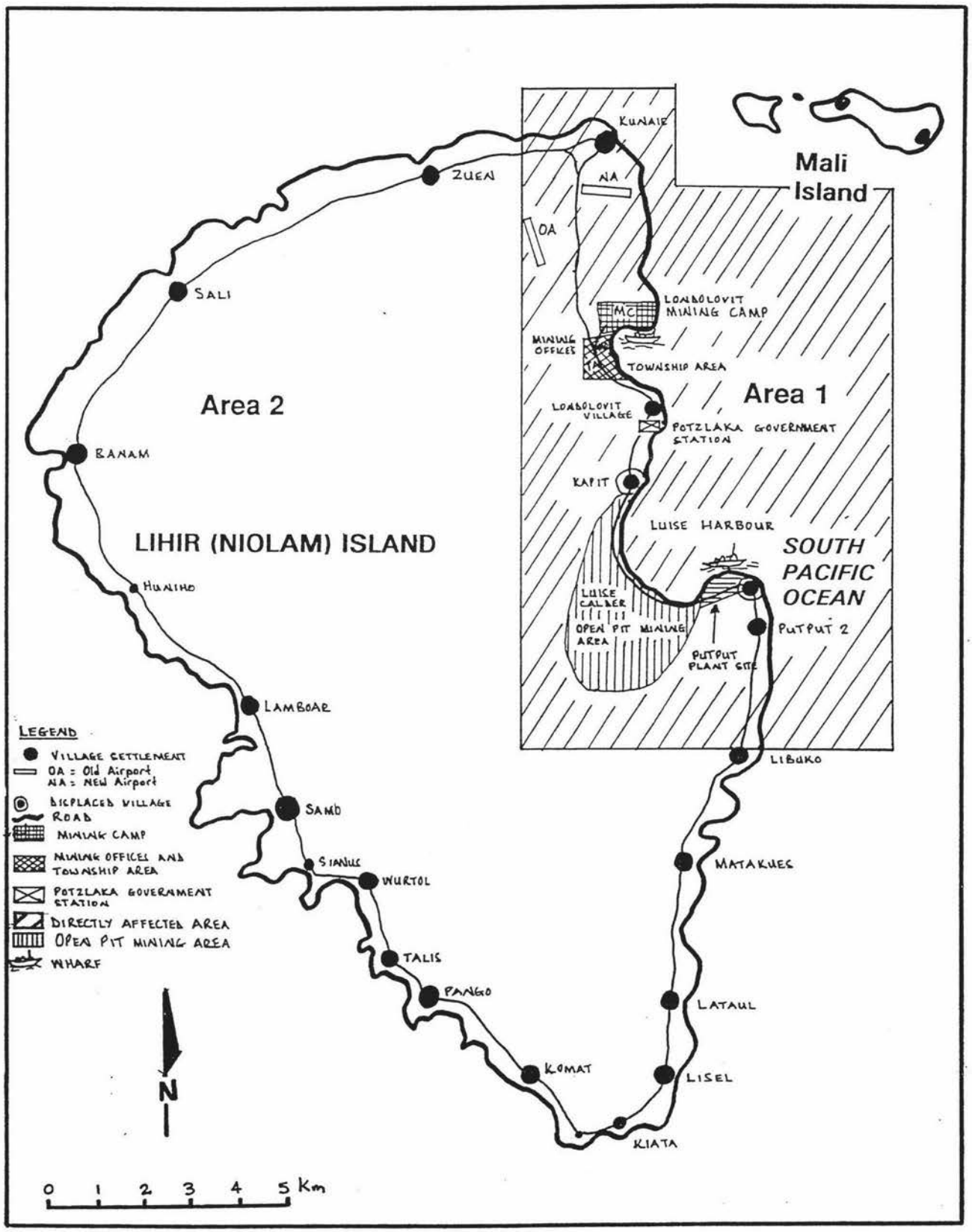
As discussed in Chapter One of this thesis, Lihir women have traditional ownership rights over *tumbawin* land and children inherit land belonging to the mother's *tumbawin*. Besides, it was also noted that men can also possess landrights of their own from another *tumbawin*, particularly from their father or paternal uncles, if they perform favourable *kastom wok* for them. Therefore, basing my discussion on the fact that women in Lihir have certain rights over land and property, the following questions have to be asked: were views of Lihir women solicited and taken into account in the early stages of the mining project and were they given enough information on the nature of the project? Before these questions are addressed, I will identify the major players responsible for making it possible for the Lihir Gold Project to get off the ground.

An important event in the history of Lihir gold mine project is the writing of the initial agreement and the signing of the Integrated Benefit Package (IBP) between the Lihir Mining Area Landowners Association Incorporated (LMALA), representing the landowners in the directly affected area (Figure Five); the Nimamar Development Authority (NDA), representing all the people of Lihir; and Lihir Management Company (LMC), representing the developers. This was witnessed by representatives of New Ireland Provincial Government (NIPG) and the National Government of Papua New Guinea. The signing of IBP on April 26, 1995, marked the beginning of rapid on-site construction and infrastructure developments on Niolam island.

During the signing of the IBP, the people of Lihir were represented by two main groups: LMALA and NDA. These two groups were led by three prominent and well educated leaders; Mark Soipang and Leo Glaglas of LMALA, and Ferdinand Samare of NDA. With support from other prominent Lihirians, they managed to pursue and achieve a very good compensation deal for the landowners before finally granting their approval for the development of the mine to proceed (Filer, 1995:67). The leaders of the two groups were also responsible for negotiating and signing many other agreements before and after the IBP agreement. These included the Mining Development Contract (signed in March, 1995); the Forum Agreement (signed on April 26, 1996); and the Memorandum of Agreement (MOA) between the National Government of Papua New Guinea and the people of Lihir, represented by LMALA and NDA. The question now is, considering the power and responsibility accorded to LMALA and NDA, was there equitable participation of women and men in these two groups?

'Participation' should be understood to mean having a fair say in decision-making, not just sitting as a representative on a committee. Specifically, I was interested in whether women were taking part in drawing up contracts, voicing their views, and signing agreements on paper. I found that in most situations they were not. For example, during the signing of the IBP on April 26, 1995, there were no women signatories because the representatives of the people in NDA and LMALA were all men. As confirmed in NDA and LMALA's list of customary leaders (Appendix Two), all positions

Figure Five: The Mine Site and Affected Areas



Source: LMC Environment Management and Monitoring Program, 1993.

regarding village, ward or *tumbawin* leadership on the Island were held by men. Therefore, it came as no surprise that no women members were part of the party that made and signed agreements leading to approval of the gold mine project. Furthermore, Susanne Bonnell[18] (1995:163) also confirmed that women's voices were absent in the recently developed Forum process, where agreements were made.

However, this picture should not blind analysts with the idea that women had nothing to do with the project, nor that they were left out in the dark. Most women I interviewed admitted that, prior to the recent developments on the mining project, they were made aware of the ore deposits on Niolam island and the prospects of developing it. They admitted having a reasonable idea about the sort of development which was going to take place and seemed to understand the negative and positive impacts a project of such a nature would bring to their society. They indicated that they supported their men throughout the early stages of negotiations until the initial agreements which led to the signing of Lihir Forum Agreement and the IBP on April 26, 1995. Technically speaking, therefore, the male leaders who represented the people appeared to have the full consent of women.

5.3 Constraints on Women's Participation in Decision-making

It is important to consider fully why women left all negotiating and signing responsibilities to men. During my interviews with Lihir women, I identified two main problem areas which accounted for women's low profile in decision-making and their absence from the negotiating table. These were cultural factors and, a related factor, the basic attitudes of both men and women.

[18]Bonnell works for Subada consultants of Australia, as an expert on gender issues. She has a lot of experience in dealing with women's issues in mining areas in PNG and has recently been hired by LMC to assist them, particularly with reference to the relocation programme.

5.3.1 Cultural Factors

Lihir society has a very strong cultural background. People value their culture and traditional way of life very highly and their lifestyle is deeply rooted in cultural norms and practices. As described by Kiapseni (1976:7), in the 1970s the daily order of people's activities was determined by customary morals. Smalley further noted that prior to the discovery of gold, the society was a "closed, encapsulated, unit of social relations and cultural values" (cited in Skalnik, 1988:29) and was shaped by strong traditional ideologies. In addition, Kiapseni (1976:7) argued that the moral standard of Lihir community was guided by *kastom*, and thus following *kastom* was seen as being for the good of the community. As an example, women and men had defined roles to play in their daily work. There were no complaints about this because people traditionally knew they were doing the right thing by following their set roles.

Thus, as discussed in Chapter One, women's roles were basically centred on reproduction and subsistence production and this focuses their activity on the household. They were more concerned with the wellbeing of their families and had very little time to spend for themselves. Men, on the other hand, were more involved in public affairs of the clan or the community, making decisions for the family, the *tumbawin,* or the village. Men rarely sought additional advice from women and, likewise, it was hardly the case that women would sit or stand in front of men and talk openly about an important issue. Traditionally, it was impolite for women to do this.

Women normally assumed a very low profile at any decision-making occasions in the past, and this tradition has continued until the present day. As a woman from Putput village admitted:

> *Mipela i stap tasol na harim tok blong ol man. Sapos ol i tok wonem, bai mipela i bihaenim tasol na wokim wonem samting ol i tok long en. Husat meri i sakim tok em i soim olsem em wanpela les meri na em bai igat nem nogut long ples (Pidgin).*
>
> *We listen to and obey what the men say. If they make a decision over an issue, we*

will go along with the decision and do whatever they ask of us. Any women found not doing what the men say will be regarded as lazy and will have a bad name in the village.

On another occasion, while in Kunaie village, I attended and observed a clan meeting. The meeting was attended by leaders representing the same clan but from different villages on the island. The clan was one of the several landowner clans who claim ownership of the land currently under development. During the meeting, I noticed three women who were also present but they were seated a few centimetres out of the main core of male attenders and were silent throughout the whole session. They hardly contributed except for occasional nods from their heads showing their approval over an issue. When I asked why they were silent during the whole session, they just replied with a smile saying, *"Olgeta samting em ol man i tok pinis na mitupela i hamamas long en" (Everything has been said by men and we are happy with it).* However, I believe the three women may have been restricted in their answer because they strongly respected men's views and feared that they might offend or upset them by challenging what they said. Furthermore, I also noticed that other women kept away from the whole meeting session and only came in when they served food after the meeting.

Women's loyalty and attachment to cultural norms and practices is thus an important reason for women's lack of representation in major decision-making processes regarding the mining development.

Strongly associated with culture and traditional *kastoms* are the **general attitudes** of Lihirians. Practically, the attitudes and behaviour of Lihirians also contributes, in a certain degree, to the poor participation of Lihir women in decision-making processes. Being already moulded by cultural ideologies from childhood, the general behaviour and attitudes of (a) men to women, as well as from (b) women to women, have a significant influence on women's moral values and their general response to development.

5.3.2 Attitudes of Men Towards Women

In Lihir, women cannot do anything freely without the consent of their father, brother, or husband. Women's lives are very much controlled. For example, during my interviews with women, I was told that a woman is obligated to assist her brother in whatever activity the brother is involved in. This can involve cooking food for his guests or helping his wife with garden work. In acknowledgement, most women I interviewed said that, *"Em wok blong mipela long halivim brata" (it is our responsibility to help our brother).*

The commitment and respect Lihir women have shown their culture and their men has placed them in a vulnerable position whereby they can be exploited by their men. Some women indicated that they would like to get involved in activities outside of their normal duties at home including, for example, paid work or women's group activities, but it all depends on what the men say.

Recently some women have confronted their men about sharing household responsibilities, but men typically reply saying, *"Em wok blong yu" (That is your job)*. Furthermore, a lot of men I interviewed bluntly stated that they could not allow their wives to be recruited for employment regarding the mining development because they had their work at home including the care of children and the wellbeing of the family. Others were more relaxed and stated that although they wanted their wives to get employment, they feared that their wives may not fulfil some of their traditionally required obligations and may end up being disliked by the husband's parents and maternal uncles. Because of Lihir *kastom,* conservative men are likely to get annoyed and embarrassed if women try to assume positions of superiority or status. The last thing these men would want to see is for a woman to be successful in modern business, to hold a position above them in employment, to drive a vehicle, or to participate in any role that is considered by most people as being appropriate for men.

Women in Lihir find the general attitude of most men towards them, regarding the idea of women getting involved in small-scale business or agricultural projects, very negative. The negative attitudes

of men are sometimes deliberately aimed at discouraging them from putting such ideas into practice. For example, the women's groups that I interviewed on Lihir Island described men's attitudes as generally restricting, rather than supporting their work. They described that:

> *Planti long ol man ino save halivim o sapotim wok kamap blong mipela ol meri. Ol i save paitim mipela na krosim mipela long noken joinim ol kaen group olsem blong ol meri o long wok kamap. Planti taem ol i save lap na wokim fani long mipela. Olsem na mipela ol meri i painim hat long go insaet long ol kaen wok kamap.*

> *The majority of our men do not support or assist us in our work for development. They used to abuse us and stop us from joining women groups in the village. Many times they laugh at and make fun of us when we try to get something going. That is why we find it very difficult to get involved in development activities.*

Generally, most men are not very keen on letting their women participate in activities outside of their traditional duties. Even though some men in the village do support and assist them, women still feel insecure because the majority of their men do not support them. Some husbands physically abuse their wives for taking part in activities organised by women groups, and indirectly accuse them of failing to perform some of their household duties. Men often make fun of and laugh at women. A popular comment always made by men when they make fun of women reads, *"Yupela i ting yupela moa yet ah? Dispela samting yupela i statim bai ino inap kamap liklik" (Who do you think you people are? You will never be successful in what you are doing).* This sort of attitude from men is very discouraging for women.

The negative attitudes of men are partly determined by the possessive and jealous feelings men have regarding women. That is why today, apart from their reproductive and productive work, Lihir women concentrate most of their efforts on church group activities, something that men will not make fun of or go against, where they get together and participate in church programmes.

The attitudes of men thus make it very difficult for women to be involved in decision-making processes, make their own decisions, or to get involved in development activities associated with the current mining development.

The above section has shown how and why women are hesitant to participate in many community discussions, decision-making and development projects because of men's attitudes. The next section concerns women's attitudes about themselves and how this affects their behaviour.

5.3.3 Women's self-perception

In Lihir, women are not very vocal in the presence of men. They are generally very shy and hardly open their mouth to talk about an issue when in front of another man. For example, I noticed during my interviews with women's groups in the villages that it takes a long time before many women will contribute to the discussion. While they will talk amongst themselves, usually only one will talk on behalf of them all. As acknowledged by Mandi Filer (1989:399), a researcher must be very patient because women are not very open in public discussions. Young women are generally particularly shy: they hardly ever contribute ideas.

Furthermore, the conservative attitude of many elderly women does not help women pursue goals of equal participation in decision-making and development. Most elderly women continue to promote tradition by laying down strong guidelines for the younger women to follow and observe. They continuously remind and advise younger women wherever or whenever possible to uphold women's dignity by doing their duties well. This means women should concentrate on executing their roles and leave men deal with theirs, including decision-making.

There are various ways in which women's behaviour is socially controlled. For example, a young woman can be openly scolded by her mother, aunt, or sister if she is found walking carelessly in front of men; not performing her womanly duties properly; involved in an open argument with her husband; or if she gets a job against her father's advice. Furthermore, the general idea that it is

morally wrong and impolite for women to walk or to talk loudly in front of men, or to sit face to face with men, has made it more difficult for women to get involved in decision-making processes in the modern context.

The thought of being ridiculed or the centre of village gossip, further discourages women in general from venturing outside of their traditionally defined activities. As expressed by Londolovit village women, *"Sampela blong mipela i gutpela tru long toktok baksaet long narapela meri, olsem na mipela i poret long bikhet" (Some of us are very good at gossiping about other women, that is why we try our best to avoid getting into trouble).* The last thing a Lihir women would want is to be talked about in a negative way by other women.

Another associated problem that Lihir women face is that they often find it very difficult to co-operate with each other to work towards a common goal. Despite the fact that there are established church groups like the Catholic *Mama* (mother) Group and the United Church Women's Fellowship group, where women regularly meet, co-operation between women in these groups is extremely poor. This may be explained in part by the fact that women are generally less mobile than men and have few relations with women outside their village.

The moral norms of cultural ideologies have been strongly built into women's psyche and this has played a significant part in orienting the current situation of women. Both women and men believe it is morally right for women to behave in a certain way as this has been done by generations before them. Thus it would take a stubborn and brave woman to get past all the cultural barriers that have been discussed in order to take a stronger role in decision-making and the development process.

Now that it has been identified that women played a very minor part in the decision-making processes regarding the mining development, we need to consider briefly what stage the mining development was actually at when I conducted the fieldwork.

5.4 Current State of Mining Development

The current mining development is centred on Luise Caldera, which is the locus of ore deposits of the Lihir Project (LMC Prospectus, 1995:47). This is located on the east coast of Niolam island (Figure Five). It has been suggested that the gold mine, when it goes into production, will be one of the world's largest gold mines outside of South Africa (The South Pacific Review, 1993:37). The projected life of the project is 36 years, in which 226,000 ounces of gold is forecast to be produced yearly (Lihir Gold Limited, 1995:5). Gold production is planned to begin late in 1997. Ore will be extracted mainly from open pit mining.

Since the signing of the Integrated Benefits Package (IBP) on April 27, 1995, rapid on-site activity and massive infrastructure development has gone ahead on the island. The current (April, 1996) infrastructural activity includes the building of roads and the ring road around the island which has been completed; the construction and completion of camps[19] one and two with camp three nearing completion, which can cater for 772 beds (Photo 12); the earthworks and building construction on Putput plant site and the relocation of Putput One village (Photos 13 & 14); the completion of site management, community relations and business development offices; the construction of the new international capacity wharf and the completion of a new airport; the earthworks on the mining township site; and the relocation programmes for Putput and Kapit villages.

Overall, the changes that are currently taking place in Lihir are so dramatic that locals are finding it difficult to cope. However, the company has made it a priority to make sure that local people fully benefit from the project. A lot of important lessons were learnt from other mining projects like Bougainville, Mt Kare, and Ok Tedi where operations were disrupted because certain local issues were not properly addressed. Thus in Lihir, many pressing issues were thoroughly addressed before agreements were reached and the IBP signed. IBP agreements included compensation agreement

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ps are sleeping quarters for mine workers, especially those from outside Lihir.

and relocation agreement. The Company (LMC), in its role as the developer, has established a Community Relations Office to look at issues concerning land, negotiations, compensation, education, relocation, women, youth, sport, welfare services, community development works projects, social monitoring, and general community assistance. All these are regarded as important as they will affect the lives of Lihirians if not properly addressed. The following section examines efforts made by LMC to promote women's development, in particular.

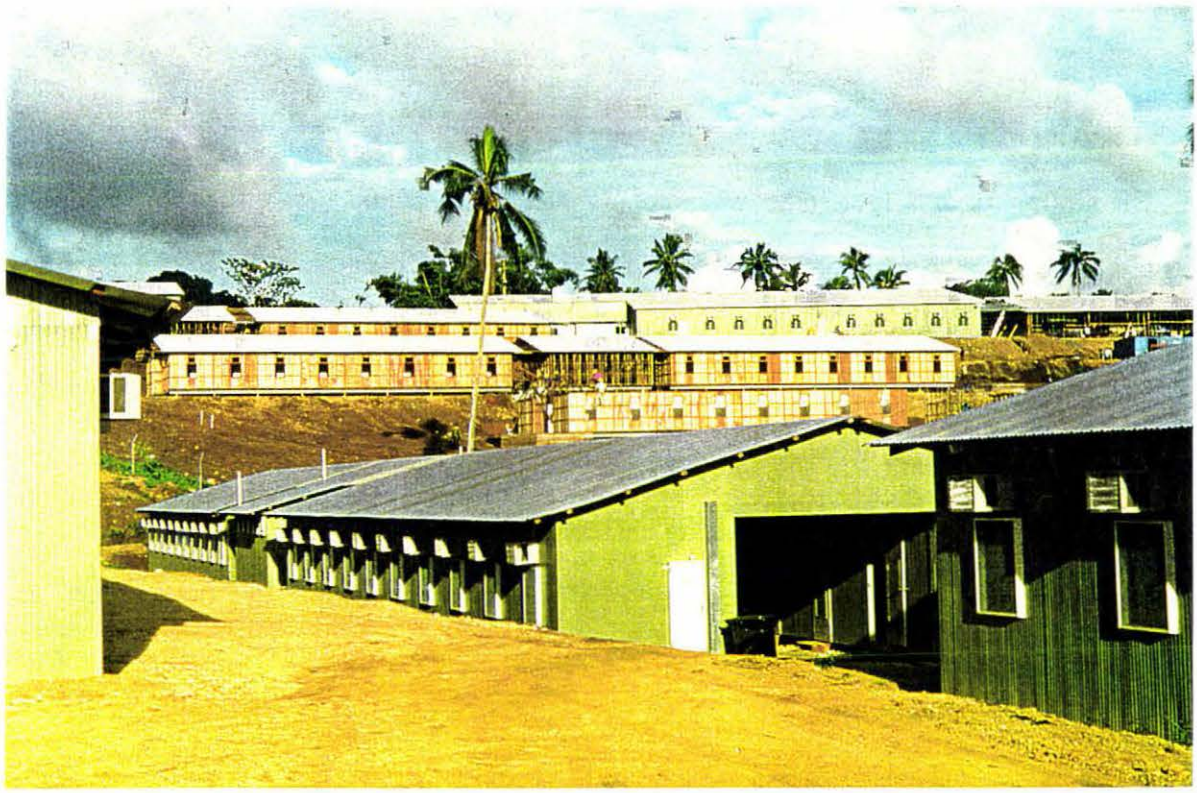

Photo 12: As part of rapid infrastructure development, building and site construction are currently in progress. This is part of the mining camp where LMC and associated company employees are living.

Photo 13: Earthworks and building construction at the Putput plant site. This area was once Putput 1 village. Putput 1 villagers have since been relocated to a new village site.

Photo 14: Part of the new Putput 1 village settlement. The displaced villagers are compensated with fully furnished company built houses.

5.5 How LMC Addresses Gender Issues

The above section discussed some of the difficulties in women participating in decision-making about the mining development. Below I will be discussing the extent to which LMC has recognised these, and other difficulties faced by women because of the mining development, and I will also show what steps LMC has taken to assist women.

It has been LMC's stated priority that Lihirians are looked after and receive the best benefits out of their resource development. This was the main objective reached in the IBP agreement and LMC has been very active in implementing it.

LMC's position on the issue of Lihirian women's development has been very positive. For instance, all Lihirians, both men and women, have been encouraged to participate in the development of the mine and their society. However, LMC acknowledged that there is bound to be disruptions to the way of life of Lihirians and, women, as the backbone of the community, are likely to bear the most weight of the social impacts. Under LMC's Lands and Community Relations Department (CRD), they target women along with other important social issues such as land, negotiations, compensation, education, communications, relocation, youth, sport, welfare services, community development works projects, social monitoring, and general community assistance.

In terms of CRD's commitment to women's development, in the early stages, LMC hired a number of consultants (Susanne Bonnell, Colin and Mandi Filer[20], Richard Jackson[21] and recently Martha

[20]They are currently working for PNG's national research institute. Colin Filer is an anthropologist by profession and does a lot of consultation work with his wife, Mandi-Filer, for major resource development projects.

[21]Richard Jackson is currently a lecturer at the Department of Geography in James Cook University, Australia. He and Colin Filer combined in doing a report to the Lihir Liaison committee on the social and economic impact of the gold mine on Lihir in 1989.

Macintyre[22]) who conducted research on Lihir society and women in particular. The consultants have assisted a great deal by writing special reports and designing concrete programmes and policies for LMC to follow. The findings of these consultants were very much the same: women were a disadvantaged social group in Lihir society and their social and political status was very low.

With advice from the consultants, three important programmes were developed under CRD's management programme. These included: (i) assistance to women's groups and women's associations; (ii) non formal education programmes; and (iii) support services for female employees. The three programmes were designed to help Lihirian women build their self-confidence and self-esteem so that they could be more involved and participate better in the mining development. They were also designed to help women work on their own development and improve their social and political status within their communities.

5.5.1 Assistance to Women's Groups

The first programme involved logistical and technical support from LMC towards women's groups and associations. Basically, prior to the mining development there existed two types of women's groups in Lihir. These were the Catholic *Mama (mothers)* Group (CMG) and the United Church Women's Fellowship Group (UCWFG). Within the two church groups their primary concerns were church activities and charity work. Small business activities and projects of a similar nature were never part of their objectives. The two groups have their own network with their counterparts in other villages. For instance, once in a while all CMG members from every village may get together for an occasion. However, traditionally these two groups had very poor relationships with each other and co-operation between them was almost non existent.

The major concern here is that these two groups have never worked together as one social group before. This has been identified as the greatest problem Lihir women face and find difficult to avoid.

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[22]Martha Macintyre is currently a lecturer in the Sociology Department at La Trobe University, Australia. She has done a lot of consultation work on social issues regarding major development projects. She has been hired by LMC to run a social impact monitoring programme on the island.

This divisions among women weakens women's quest for greater status and opportunities. Women themselves admit that as a group they are weak and thus they may not achieve any benefit from the mining development with the kind of situation they are in.

LMC hired Susanne Bonnell, to draw plans to address this issue. Susanne came up with the idea of uniting all Lihirian women and to encourage them to co-operate. This saw the birth of *Petztoreme (work together)* women's association (PWA) in 1991. The main objective of the association was to bring women within the two church groups together so that they could strengthen women's programmes on the island. In addition, they wanted to built women's self-confidence at the group level. It was acknowledged that there was a great need to have an organisation such as *Petztoreme* in place as a forum where Lihir women could meet, discuss and share issues of concern (Lihir Gold Times, 1993:5). The association had women representatives from each of the 15 community government wards on the four islands including the three church presidents.

LMC strongly supported *petztoreme* women's association and provided much needed funding and technical assistance to get it going. With assistance from LMC's social development officers, Jacklynne Membup and Anna Tohiana, and consultant, Susanne Bonnel, work was focused on uniting women on the island. Their aim was to build a strong foundation for women and to build women's self-confidence so that they would participate in their own development.

Since September 1995, however, *Petztoreme* has not been functioning as it should have been. Leadership has fallen because there was a total lack of commitment and co-operation within the women groups and no meetings have been called. I was informed that *Petztoreme* association is presently existing as a name with a skeleton staff of executives. I discovered that the network between *Petztoreme*, CMG and UCWFG had broken down. Church groups still exist but function strictly according to church activities. Generally, co-operation and commitment has been the major problem with women in the three groups.

The CRD's social development and society reform officers are working at identifying and addressing the problems associated with the malfunctioning of the three women's groups but have yet to come up with a good solution.

5.5.2 Non Formal Education Services

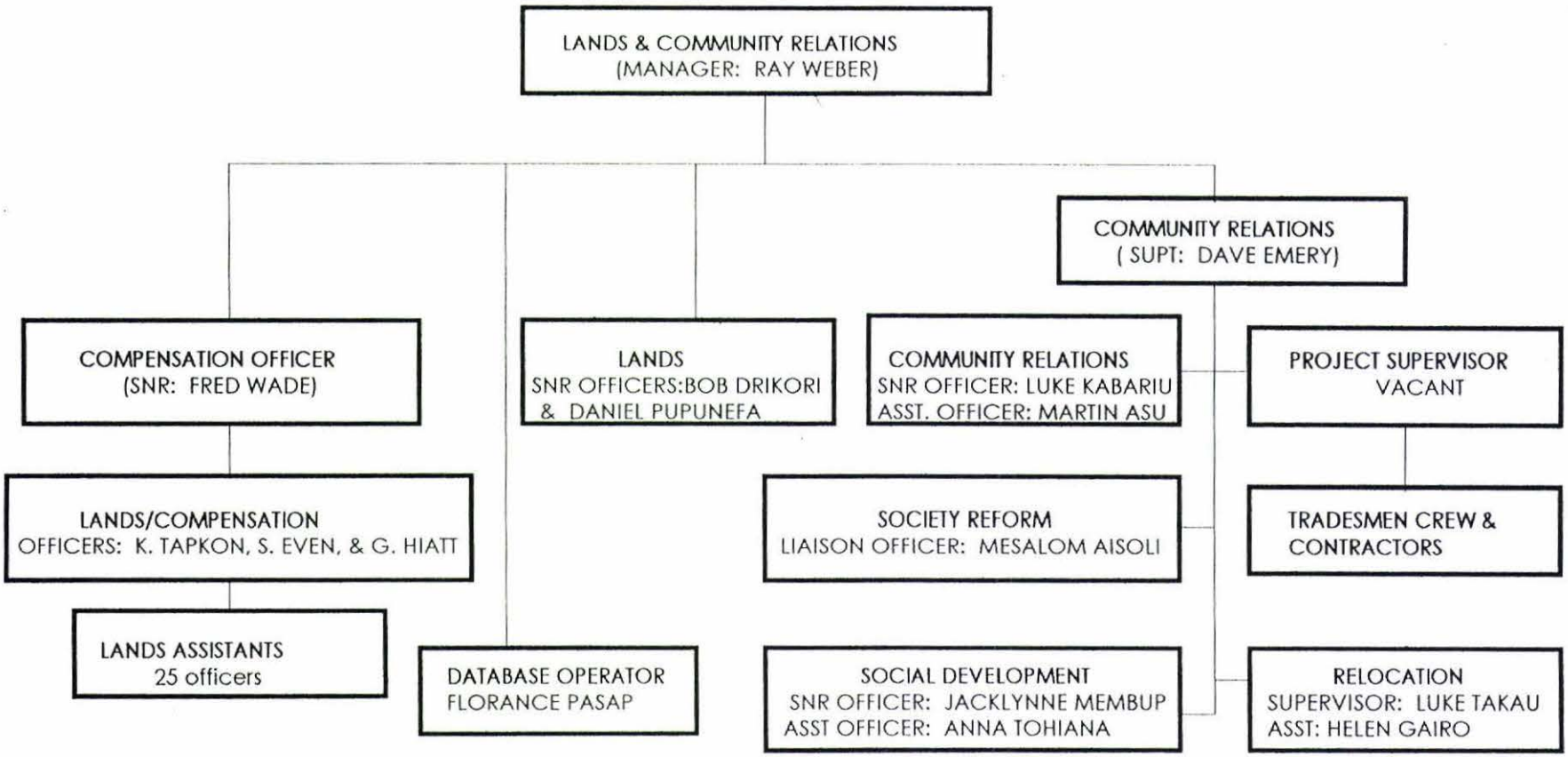
Also under LMC's Community Relations Department (Figure Six), officers from the Social Development and Society Reform Office were very much involved in organising non formal education programmes for the majority of the women in the villages. In these programmes officers conduct workshops, meetings, and hand out information booklets about issues regarding the mining development. The basic aim was to educate or update people with what had been happening on their land and to get feedback from them. For example, under the society reform programme, villagers were taken on guided tours around the mine site from time to time to let people gain firsthand information on the latest developments. In most cases these programmes involved both men and women. This has been going very well and CRD's society reform officers are very active in keeping villagers well informed with the on-going developments.

5.5.3 Encouragement for Females to take up Employment

LMC has played a big role in encouraging the presence of women in the workforce and creating support services for female employees. Employment opportunities were made available by LMC and associated companies, and both men and women alike were encouraged to get a paid job. Although the number of Lihirian women in employment is much lower than men, LMC has continued to encourage women to take up employment.

Besides training women, LMC has continuously challenged Lihirian women to take up more challenging jobs like driving vehicles, operating heavy equipment and machinery, and other important office jobs which are provided by the company. For instance, in a speech delivered to women, LMC's senior society reform liaison officer, Mesulam Aisoli, challenged women that they should think big and aim high if they want to be equal partners to their menfolk who work on the

Figure Six: Structure of LMC's Community Relations Department



Source: LMC Community Relations Department, Lihir, 1995.

Lihir project (The Independent, 1996:18). He stressed that:

> *There are enough women already driving light vehicles including taxis, but you should aim to drive even bigger vehicles and equipment like the 30 tonne moxy dump trucks.*

Mesulam acknowledged that while men have been traditionally regarded as having the capability to take on any job at major resource developments, it would be history in the making if local Lihirian women took up the challenge to do the same (The Independent, 1996:18). On the other hand, however, LMC has had to use much care and respect to avoid any conflicts with cultural values and ideologies when involving women in employment. They are aware of traditional *kastoms* of Lihir and are not intending to upset men by pushing women into jobs considered by men as theirs. LMC lets Lihirians decide for themselves whether they want to make themselves available for any activities related to the mining development. It has been a difficult process for LMC to recruit women but the number is slowly increasing, both in training programmes and in the mining workforce.

5.5.4 Other Programmes

Besides these three programmes discussed above, LMC has planned ahead and established concrete programmes so that Lihirians and in particular, women, participate in and benefit from the mining project now and in the future. Good progress have been made in the following programmes: extending regular health clinic programmes to villages; continuous assistance for the relocated women concerning how to look after their newly built houses and how to use gas stoves; and most importantly, providing funding assistance in education. LMC believes that education will probably break the barrier for women to participate in future developments. Therefore it is investing heavily in education and training to facilitate women's development.

LMC's attention is currently focused on giving the same opportunities for both Lihirian men and women in employment, and has also thrown its support behind women's groups and their

reorganisation. Furthermore, it is encouraging women to attend and take part in important IBP meetings which are run every week.

However, although good efforts have been made by LMC to encourage both Lihirian men and women to participate in the development of the mine, they have not focused on the empowerment of Lihirian women. Lihir women lack self-esteem and the confidence to face the current challenges created by the mining development and, therefore, they find it extremely difficult to participate positively in its development processes.

2.6 Summary

The signing of the IBP in April 27, 1995, marked the beginning of all development activities concerning the mining project on Niolam island. Rapid on-site construction and infrastructural developments are currently taking place in preparation for gold production in late 1997.

The activities leading up to the IBP signing had many Lihirian leaders, represented in LMALA and NDA, very involved in meetings, discussions and important decision-making processes concerning the mining development. The leaders were all men. Generally, women did not participate in all these activities and their views and interests in particular were not represented even though they were customary landowners.

There were two major constraints to women's participation in decision-making process: *kastom* and the general attitudes of Lihirians about women. Traditionally, *kastom* ideologies and practices identify that all decision-making roles are men's responsibility. Likewise, the general attitudes of Lihirians discouraging women from participating in many forms of development. Women's strong attachment and loyalty to traditional *kastoms* prevents them from speaking out in an attempt to influence the direction development takes.

LMC recognised that these constraints could also prevent women from benefiting from the mining development. Thus they have made particular efforts to encourage them to participate in the mining workforce as well as giving assistance to women's groups, and providing non-formal education services and family planning services. Despite their good intentions, however, LMC has not been very successful in alleviating the significant burdens women have faced since the mining development began, as Chapter Six will explain now.

CHAPTER SIX: IMPACTS OF THE MINING DEVELOPMENT ON LIHIRIAN WOMEN

6.1 Introduction

Like other Third World indigenous people in mining areas, the exposure of Lihirians to outside forces since the discovery of gold in 1983, has had psychological and social, as well as economic impacts on the local people. Lihirians have admitted mixed feelings of excitement, confusion and doubt about what the current mining development will bring to their lives. Although they are aware of a lot of good things which are coming their way, like improved basic services, increased business opportunities, and improved living standards, they also know that their lifestyle will probably never be the same again.

The establishment of the mining development on Niolam island has had enormous social impacts. Even though the mine is at its infant stage, some local people have already expressed concern about the changes it has caused. The changes that are taking place are certainly affecting the lifestyle of Lihirians, but they are not all being affected in the same way. The effects experienced by women may be different from those experienced by men. The same applies to villagers in the immediate vicinity of the mining project versus those living away from it. In my experience it was elderly men, and women in general, who were most concerned about these changes.

The main impacts of the mining development are presented in Table Six (page 138). These are listed as positive and negative impacts. The negative part includes the disruptions to people's lives and the positive, benefits people are currently receiving. However, although there are some differences in the level of impacts felt by villagers in Area One (directly affected area) which are more intense than those living in Area Two (Figure Five), in most cases the nature of the impacts they are experiencing is the same. These positive and negative impacts summarised in the table will be expanded upon in the discussion to follow, and people's opinions of the changes will also be highlighted.

As part of its community development project, LMC assisted in bringing health services closer to the people. They have set funds for the construction and maintenance of Aid posts in some villages. These are serviced by health workers employed by LMC. In addition, LMC is in the process of building a fully equipped medical hospital which will provide better health services for both project employees and the Lihirian population at large (PNG Post-Courier, 1995:25).

LMC has also established welfare services support and family planning programmes to provide Lihirians with much needed social support and counselling. Similarly, family planning has been introduced to help people control population growth. Health clinics and family planning workshops are becoming common in villages as more facilities and financial support were received from LMC.

LMC is committing a total of K6 million for education and training of Lihirians (Lihir Gold Times, 1995:5). In education, LMC commits K80,000 per annum for educational development for Lihir children. This includes student scholarships for secondary and tertiary education, school fee subsidies, training, and the upgrading and maintenance of facilities (Lihir Gold Times, 1994:5). Young Lihirians are benefiting because educational facilities have been greatly improved. Both boys and girls are given much better opportunities to receive better education and learning skills. From 1993 to 1995 LMC provided scholarships for 253 Lihirian students (LMC Quarterly Review of Human Resources Report, 1995:13). School fee subsidies are provided for others in primary and secondary schools. This has resulted in more Lihirian children enroling for all levels of education.

LMC's assistance, in terms of education, goes further than just providing scholarships and school fee subsidies. They have set aside funds to help finance learning equipment and facilities for each of the 10 Community schools in Lihir and are also helping to build new classrooms and teachers' houses. For example, K300 has been allocated, on an annual basis, for each of the 10 Community Schools and a K500 allocation to Palie Vocational school (LMC Internal Report, 1995). Furthermore, the establishment of a mobile library for use by primary school pupils has helped a great deal in maintaining better educational facilities and a good learning atmosphere. Likewise, LMC is promoting

Table Six: Positive and Negative Impacts of the Mining Development to Villagers in Area One (the directly affected area) and Area Two.

Positive Impacts	Negative Impacts
. Improved education and health services	. Increased alcohol consumption
. Improved transportation and communication network	. Drunkenness and social disorder
. Better water supply (DA)	. Misuse of family money
. Increased business opportunities	. Increased domestic violence and wife abuse
. Good employment opportunities and more money in pocket	. Increased pregnancy of young Lihirian women outside of marriage
. Training and gaining skills from work experience	. Breakdown of cultural values
. Good housing (DA)	. Women's work increased
	. Women's dependency on men increased (DA)
	. Decreasing land for gardening (DA)
	. Destruction and pollution of land and water (DA)
	. Decreasing time for gardening activities, hunting, fishing, gathering, handicraft, cash cropping and community work
	. Decreasing church attendance on Sundays (DA)
	. Increased criminal activities (DA).

NB: DA (directly affected areas) indicates where the impacts are felt most by villagers in the directly affected areas.

and encouraging community school pupils to further their education by organising and sponsoring school trips to five high schools in the province. The main aim of this programme is to motivate young Lihirians to work hard in school and aim for a better education. There is no doubt that education facilities have improved a lot since the establishment of the mining development. Many Lihirian parents have expressed gratitude for the support and assistance LMC provided which has enabled their children to have better education.

6.2.2 Transportation and Communication

In a similar trend, the transportation and communication networks have been improved. In LMC's community development works projects, Lihirians have witnessed improved infrastructure developments like road works which have linked all the villages on Niolam island; the construction and completion of the new airport; and the new international wharf. For roads alone, LMC is committing a total of K80,000 annually for their construction and maintenance on Niolam island (Lihir Gold Times, 1995:5).

The improvement in road, air and sea transport facilities has benefited Lihirians in terms of their mobility within and outside of Lihir and in reaching basic services like health and education for their children. For example, the completion of the ring road around Niolam island has made it very easy for school children to live at home and commute to local vocational and community schools.

Furthermore, the completion of the new airport which has seen three to six daily flights in and out of Lihir has opened the world for many Lihirians to travel out of their island and see other places. Similarly, the building of the wharf at Londolovit as well as the new international wharf at Putput has also made it possible for Lihirians to travel and send and receive goods in bulk. More Lihirians are now travelling on boats and bigger ships in and out of Lihir. This is because it is cheaper to go by boat than by plane.

The improvement of sea, air and road transport has also facilitated a better communication network. For example, letters reach their destination much more quickly than before. In addition, communication has improved through telephones, facsimiles, the provincial broadcasting radio, LMC's monthly Gold Times news and information booklets and ward community notice boards which have been erected by LMC. Lihirians can now get updated information on the current development on the island and about other developments within and outside the country.

6.2.3 Water Supplies

Although, Niolam island has rivers and streams many villages did not have adequate water supply prior to the mining development. In Kunaie many people had to collect drinking and cooking water from inland streams and rivers. Therefore, as part of its community development assistance, LMC has funded and set up facilities for continuous water supply which are now received by many villages both on Niolam and the three smaller islands. Furthermore, LMC is also building shower and laundry blocks in villages in the directly affected area. Most people now have the opportunity to shower and do their laundry at any time of the day.

6.2.4 Business Opportunities

As discussed earlier, with so many development activities going on, business opportunities have also increased for the majority of Lihirians. Furthermore, the setting up of LMC's Business Development Office (BDO) has created a very favourable atmosphere for Lihirians to get involved in business activities. With more money in their pockets and a good backing from LMC's Business Development Office, many Lihirian men have comfortably established business firms for themselves. As outlined in the IBP joint venture policy, Lihirians have the opportunity to form a company or business ventures and get into joint venture with other established companies (BDO Report, 1995:5). The outcome has been the establishment of many of the contractor companies, as listed in Table Seven, and as many as 50 other formally structured businesses (BDO Report, 1995:1). These include private family or *tumbawin* businesses like trade stores and other small contract businesses where they buy a truck and contract it to LMC to transport workers to and from mining work every day.

Many more Lihirians have shown interest in doing business and are flocking in and out of the business development office to seek financial and advisory assistance. Money and business are now key topics discussed by Lihirian men. As an old man from Lamboar village describes it, *"Toktok blong ol long moni, ol i kaikai long moni, na ol i sleep na driman long moni" (They talk money, eat money and sleep and dream of money).* The old man is simply referring that money now controls

the lives many men, especially in Area One, as more are now involved in employment and businesses.

It has been evident in recent months that some Lihirian men have resigned from their jobs, whether in the government public service, the private sector or in the current mining workforce, so that they can start their own business.

6.2.5 Employment Opportunities

As stated above, 650 Lihirians have received employment from LMC and associated companies and are earning a regular income. The number of Lihirians in the mining workforce keeps growing as many continue to receive basic on the job training and attend short courses for appropriate trades. Many of those who are very involved in the short training programmes are young Lihir men and women and most are likely to be employed in the general workforce with the mining project. Up until 1995 the number of Lihirians who underwent some form of training at the mine site totalled 804 (LMC Quarterly Review of Human Resource Report, 1995:12). Most are now employed and working for LMC and associated companies while the rest are either running their own business or are employed elsewhere. Generally, the mining development has created a very good opportunity for able Lihir men and women to gain employment. Money is no longer a problem for most Lihirians as many are now employed with regular wages.

6.2.6 Compensation and Equity for Lihirians

Under the IBP agreement, LMC estimated to make aggregate capital expenditures of US$ 22 million and an average aggregate annual compensation and other payments to landowners and other Lihirians of approximately US$ 1 million (LMC Prospectus, 1995:88). Compensation will cover all affected natural resources and Lihirians immediately affected by the mining development.

Many Lihirians have been paid very big sums of compensation money for their land in the directly affected area, cash crops, fruit trees, valuable plants and trees, fresh water resources, and sea

water which are now being impacted on due to the development of the mine. With the kind of money they have, many are already doing a lot of travelling, shopping and investing in businesses.

In terms of the projects ownership, agreements were made that 40 percent Shares will by owned by Southern Gold (Bahamas) Limited (which is owned 75 percent by RTZ and 25 percent by Vengold), 30 percent by Niugini Mining, and 30 percent by Mineral Resource Lihir (MRL), a company wholly owned by the Papua New Guinea government. Of MRL's 30 percent Share, half of it will be held in Trust on behalf of the landowners of Lihir Islands (LMC Prospectus, 1995). The hardline stand by Lihirian leaders during negotiations made sure that Lihirians did not miss out altogether[23].

6.2.7 Improved Housing

Besides spending their money on other luxuries, a growing number of Lihirians are improving their living standards by building more modern houses for their families. Associated with these houses is a more healthier environment in terms of better sewerage system and hygiene. The whole idea was initiated by LMC as part of its village development scheme to assist in improving standard of living for people not directly affected by the mine development (PNG CMP Bulletin, 1995:11). LMC is assisting by providing expertise to assist in planning and building houses when needed. Generally, the scheme has provided many Lihirians with the incentive of saving what money they earn from the mining development for housing and a better standard of living.

For the directly affected areas like Putput 1 and Kapit, where the villages have been relocated, LMC has provided three-bedroom houses (Photo 14). These houses are fully furnished with basic kitchen-ware and sanitation facilities. Furthermore, LMC has established the formation of a K600,000 trust fund to provide housing assistance for future generation of displaced villagers (PNG CMP Bulletin, 1995:11).

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[23]Lihirian leaders were very effective in negotiating the best possible benefit package for the landowners and Lihirians as a whole. They succeeded in convincing the national government to give half of its 30 percent stake to the Lihirian people (Filer, 1995:66).

6.3 Why Lihirian Women and Men have not Shared Equally in the Benefits

While the above discussion listed a number of positive impacts from the mining development, women and men have not always shared equally in benefiting from these impacts, as this section will show.

6.3.1 Women and Education

It has been a common practice in Lihir that parents prefer to send their sons to school rather than daughters. Daughters are sometimes kept at home because parents are afraid they might get pregnant outside of home and shame the family. This is a problem because many parents are still reluctant to send girls to secondary schools. Mothers also need them at home to help out in their domestic work. This, in most cases, has resulted in women's higher illiteracy level on Lihir than men.

While the improvement in education facilities on Lihir islands as well as the access to money for school fees has seen both boys and girls enrolled in and attending schools, many women's workloads have increased because their young daughters, who have been their immediate domestic assistants, are no longer home to help out. For example, they are no longer at their mother's side to care for the baby while the mother works in the garden, or to cook meals when the mother attends to the sick child. This provides one example of how apparent improvements provided by the mining development actually can make women's lives more difficult.

6.3.2 Women and Transport

The improvement in transport facilities (road, airport, wharf) since the development of the mine has intensified the mobility of Lihirians. However, it is men who are benefiting most from this as they are traditionally more mobile than their women and are in control of family mobility. They also control family money and have the advantage of being able to pay for their fares, either by road, sea or air transport, to go to another place. Few women have been asked to accompany their husbands on trips to Port Moresby or other provinces in the country: trips which have increased in

number since the mining development. They always have their hands full at home, taking care of the household and child-care matters, and are never considered available to do anything else.

In terms of road transport services on Niolam island, women and children have been given second preference. Many Lihirians now own trucks and light vehicles but they contracted them to LMC and associated companies for mining work. This has resulted in women and children waiting for transport to go to the health centre in Palie, to school, to buy some food in the shops at the mine site, or to bring their betel nut to sell at the mine site market. Men control family and *tumbawin* vehicles and have the advantage of using them as they please, while the transport needs of women and children are often accorded low priority.

6.3.3 Employment of Lihirian Women in Mining Activities and Service Industries

It was stated in the early stages of the project that besides receiving other benefit packages, Lihirians were going to benefit a lot from employment opportunities and business ventures associated with the mine (Post-Courier, 1995:25). The current state of development on Niolam island is basically rapid on-site construction work, in preparation for gold production. Lihir men and women alike are employed for paid work for the mining development. As reported in the PNG Post-Courier (1995:25), the company projected that it would recruit a total of 1100 personnel for employment, of which up to 700 personnel were likely to be Lihirians.

To date, a total of 650 Lihirians have received employment from LMC and associated contractor companies (Table Seven). Of this total, 88 percent are men and 12 percent are women. This only accounts for two percent of the total population of 3,826 women in Lihir, while 13 percent of Lihir men had found employment.

In the mine workforce, Lihirian employees are recruited for skilled, semi-skilled and unskilled work (Table Eight). A number of employees are undergoing basic on the job training, however, most are doing unskilled or general labouring work.

In the skilled workforce, Lihir women occupy jobs like office secretaries, typists, data base operators, nurses and senior office workers. More than 90 percent of the skilled women occupy the first three kinds of work. There are many secretarial jobs available in the established contractor companies. As shown in Table Seven, some of the contactor companies have one or two women employed and these women do secretarial work. Others employ women from outside Lihir for the secretarial jobs and have yet to employ Lihir women. Most of the other skilled work including management positions is occupied by men.

Nine percent of Lihirian women employees are skilled workers while ten percent of men employees occupy skilled jobs. These include jobs like managers, senior officers and supervisors. Skilled Lihir men are employed in almost all the contractor companies. Most of the contractor companies deal with construction work and they employ men for construction work. Women, on the other hand, are employed by well established companies who have bigger offices and who require more office staff.

The establishment of the training programme by LMC has given both Lihir men and women good opportunities to participate in skilled work. With regards to women, most of those currently doing secretarial work received basic training from the company, for example, some underwent basic secretarial training at the mine site and continued on in Rabaul Secretarial College to be qualified for secretarial work (Photo 16). Although the number of women in the skilled workforce is low, it is slowly increasing.

Quite a number of young Lihir women have been selected to attend basic secretarial and computing training. These consist mostly of unmarried women who have had some form of education; for example, those who have completed their tenth grade in high school. Most young women were identified and selected to attend such training programmes, while the rest had to apply to be selected. It was evident during my research that there were more young women with Grade 10

Table Seven: Number of Lihir Women Versus Men Employed by LMC and Associated Contractor Companies

Company	No. Male	No. Female	Total	% women Workforce
LMC	77	13	90	17
DKFD	37	24	61	39
AELIUM	80	0	80	0
APIRIO	13	0	13	0
AISI BISHMAN	9	0	9	0
ASIA PACIFIC SURVEYS	6	1	7	14
BRICE CORD	8	1	9	11
CLOUGH NIUGINI	19	0	19	0
KIAPTON	15	0	15	0
KAKEPU	4	0	4	0
LILIR PAPINDO	14	0	14	0
LIHIR HOLDINGS	12	1	13	8
LIHIR ELECTRICAL	3	1	4	25
LIHIR AUTO SERVICES	6	1	7	14
LIHIR TRAVEL AGENCY	13	1	14	7
NAYAL INVEST	1	16	17	94
NIVANI LIHIR	25	0	25	0
NICA	12	0	12	0
PNG DRILLERS	15	0	15	0
RAMBO MAINTENANCE SERV	8	0	8	0
PAGINI STRANG JV	28	1	29	3
L.CONCRETE & QUARRIES	11	0	11	0
LAKAKA ES	72	2	74	3
LIHIR SIKA JV	2	0	2	0
THIESS ROCHE LIHIR JV	10	1	11	9
MINETECH	38	12	50	24
COECON JV	19	0	19	0
JDA JOINT VENTURE	18	0	18	0
Total	575	75	650	12

Source: LMC Contractor Manpower (sic) Report, June 24, 1996.

Table Eight: Level of Skills Involved in Work Undertaken by Lihir Men and Women for LMC and Associated Contractor Companies

Persons	No. skilled	No. semi-skilled	No. Unskilled	No. in Training	Total No.
Male	65	176	228	110	579
Female	6	20	33	12	71
Total	71	196	261	122	650

Source: LMC Contractor Manpower (sic) Report, June 24, 1996

qualifications in the villages who indicated that they wanted to apply for computer training, but they were too shy to do so. Many were just waiting, hoping that someone would identify them and submit their name for selection.

It is somewhat surprising that so few Lihir women are employed in skilled occupations when Lihir boasts some very well educated sons and daughters. For example, a number of Lihir women who are now living in the villages are former primary and secondary school teachers or retired nursing sisters. Only two such educated women are currently employed in senior positions associated with the mining development. They are Jacklynne Membup, who works as a social development officer, and Anna Tohiana, the social development assistant, who are both employed in LMC's Community Relations Office. LMC has expressed concern that they need more women of Jacklynne and Anna's calibre so that they can work effectively in dealing with social, especially gender related, issues. LMC, however, finds it almost impossible to recruit more Lihirian women of such calibre. The two women are currently over-worked because they have so much to do in a very important and difficult area.

Semi-skilled work associated with mining includes such work as office assistants, filing clerks and receptionists for women, and plumbing, carpentry, landscaping, diesel fitting, welding, rigging, painting, drafting and operating heavy machinery for men. For women, most of their work is done indoors in company offices. Men, on the other hand, do most of the outdoor work. They are more involved in heavy and physical construction work which is progressing very rapidly on the island.

Most Lihirian semi-skilled workers obtained their skills through on the job training established by LMC. With this programme, the trainees would spend one to six months going through basic training and later would undertake practical work alongside skilled workers (Photo 17). They would then do the job on their own when they had the confidence. The training programme has been scheduled to continue through the construction phase and into the operations phase.

Unskilled work includes work such as general labouring and cleaning that does not require special skills. The majority of Lihirians in the mining workforce undertake unskilled work. About 47 percent of employed women compared to 39 percent of employed men are doing unskilled work (Table Eight). Around 90 percent of unskilled women in the workforce are doing general cleaning jobs in offices, workers' sleeping quarters, and the recreation and dining halls (Photo 18). Most of these women are employed by Nayal Investment and Minetech, who are cleaning contractors (Table Seven). These women have been given basic training in areas such as: guest and resident services (including encouragement for generally very shy and hesitant women to communicate effectively with total strangers); motel-style bed making and linen folding techniques; occupational health, hygiene and safety procedures; laundry operation and allied resident services; and in-room cleaning and maintenance (Lihir Gold Times, 1996:6). Most of the women who took part in these programmes had a low formal educational background.

The above discussion shows that while LMC has opened up many employment opportunities, most women are constrained from taking up these opportunities. Those that do are largely focused in unskilled and semi-skilled positions and in stereotypical women's jobs in which they service men.

6.3.4 Lihirian Women and Business

Opportunities for both men and women to start their own businesses were provided by LMC. For example, LMC has committed an interest-free revolving loan facility of K100,000 for small businesses (Post-Courier, 1995:25). It has also established the Business Development Office (BDO), to provide assistance and services like general management, accounting, financial and secretarial services to local businesses (BDO, 1995:1). Opportunities to start a business have been made very attractive for everyone in Lihir but it is up to individuals or groups to make it happen.

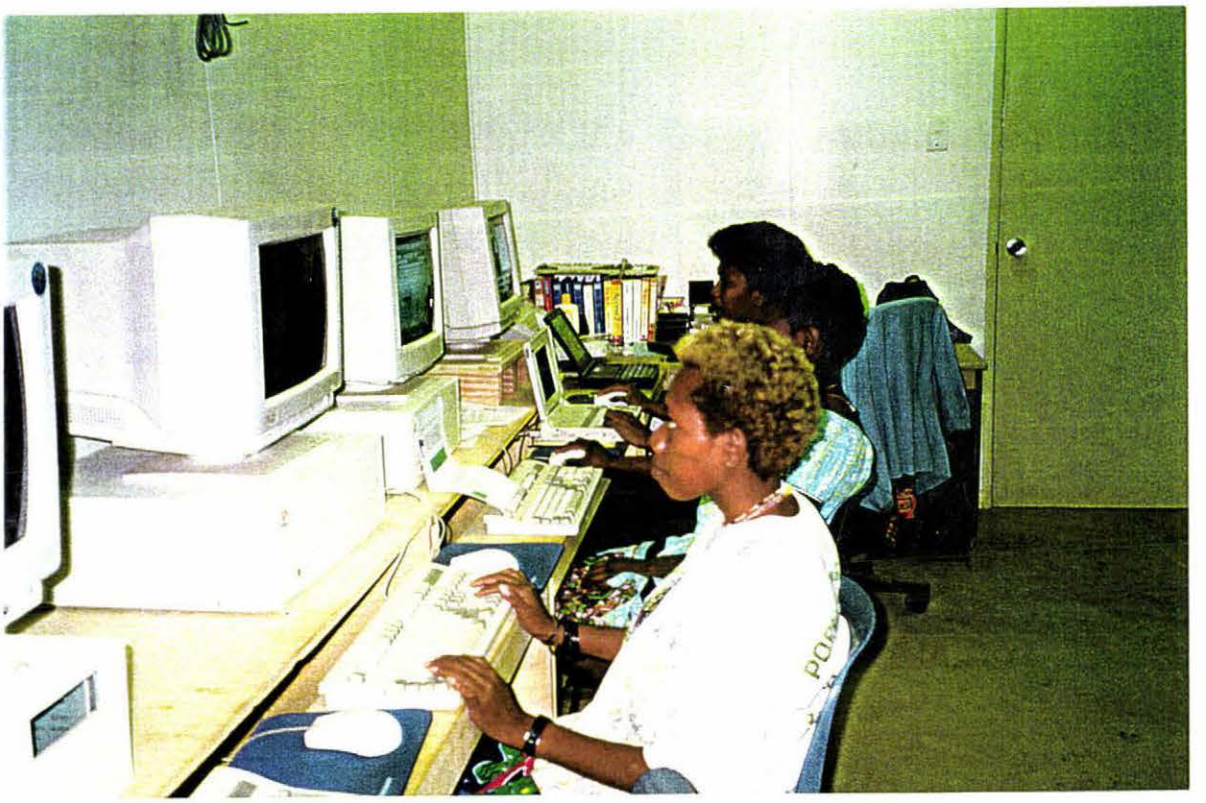


Photo 16: Three of the many young Lihir women undergoing basic computer training at Londolovit training centre. Most are working as office secretaries for LMC and associated companies.

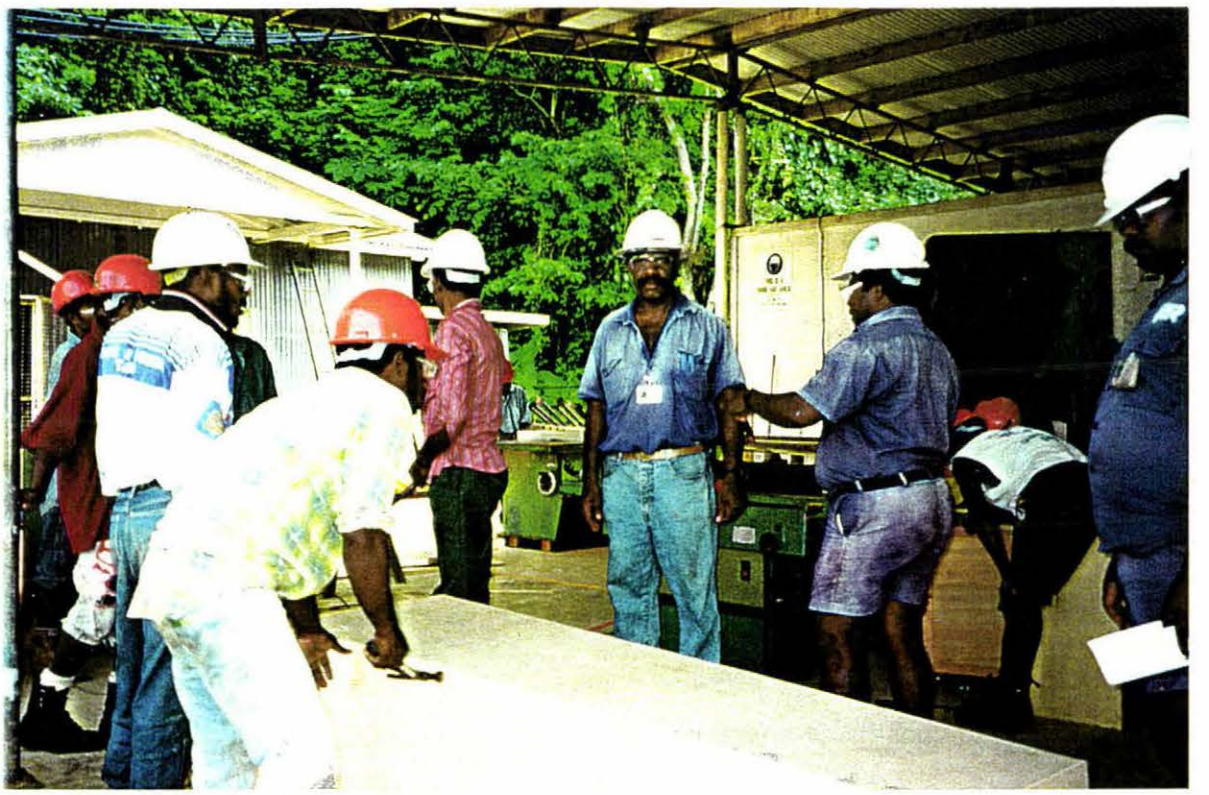


Photo 17: Young Lihir men, undergoing basic carpentry training under the watchful eye of their three trainers (standing on the right). Many are currently working alongside skilled carpenters doing building construction on the island.

Photo 18:

A Lihir woman doing cleaning work in LMC's community relations office. Most Lihir women in the mining workforce are doing unskilled jobs like cleaning and general labouring work.

Although many Lihirians have become engaged in businesses associated with the mining development, which range from small family business to big *tumbawin* businesses, women are not directly involved in their management. Men are family and *tumbawin* leaders and traditionally they have assumed all management positions. Women may, however, be recruited to do the secretarial and bookkeeping work. Men leave the role of bookkeeping to women because they think women are honest and are more careful with money than men, and that women are less likely to spend or misuse company money.

There are a number of constraints affecting women from getting involved in business activities. Again, the main constraint is the traditional negative attitude shown by men. As discussed, most Lihirian men are very jealous of their women when it comes to development activities. These men

would do anything to stop women from running a business and therefore perhaps gaining more status than most men. Similarly, conservative women, especially the elderly, would also discourage women from entering business emphasising that this is not a correct behaviour for women. While in theory there are plenty of opportunities for women to get involved in employment and business opportunities associated with the mining development, cultural ideologies and attitudes mean women are very disadvantaged from entering business activities of their own free will.

6.4 Negative Impacts on Women

Now that we have seen that even so-called improvements brought about by the mining development have sometimes not been very beneficial for women, it is time to look specifically at the negative impacts of the mining development on women. Lihirians, particularly women, feel the negative impacts listed in Table Six, in their daily lives. This discussion starts by looking at the impacts most profoundly felt by Lihirian women: alcohol abuse and related problems.

6.4.1 High Alcohol Consumption

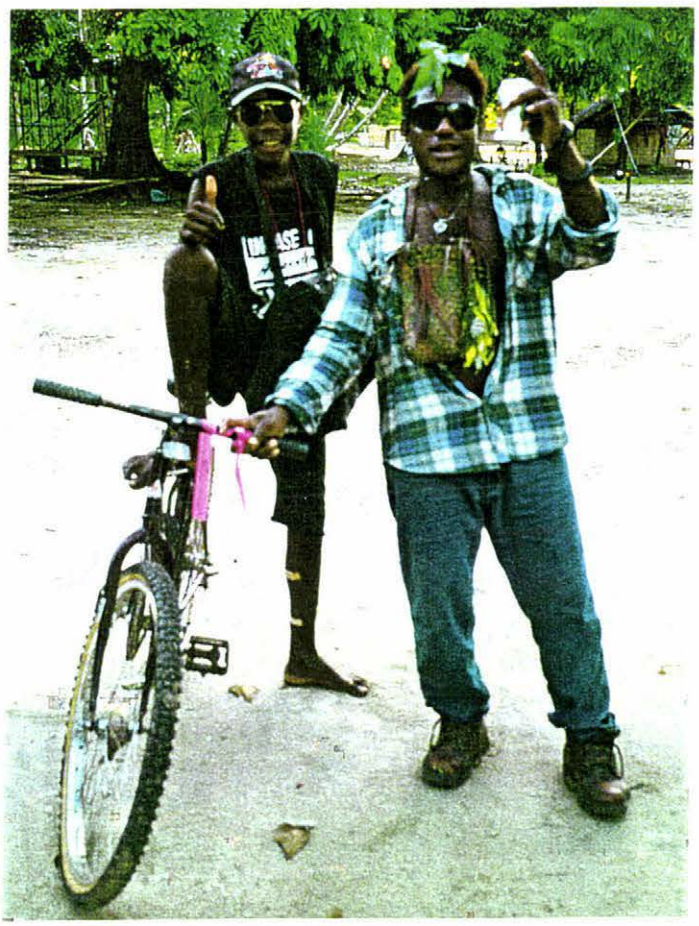
High alcohol consumption is currently the biggest problem faced by many Lihirians, particularly those in the directly affected areas. Although women are not generally consumers of alcohol, they feel many of the negative impacts of its misuse.

Since the establishment of the mining project on Niolam island and the increased disposable income Lihirians have from regular salaries and compensation payments, alcohol consumption has extensively intensified, a situation which has alarmed many women. Concerns have been raised that an increasing number of men, whether employed or not, are spending more money on alcohol and less on family needs (Photo 19). For example, a women in the directly affected area described that many men from her village would usually have plans with friends for a beer drinking party every second weekend, when their wages were paid. Sometimes they would drink up all of their money and turn up at home with no money. As more men become addicted to alcohol family needs are forgotten and many women are really feeling the impact of it as they work extra hard in the gardens

to provide food for the family. Some wives openly complain to their husbands about spending more money on beer and not enough on food and other household items. It is usually bold women who stand up to their husbands when cases like this occur. Usually such complaints result in a verbal and physical fight between husbands and wives. This is becoming common in the villages and women admitted that many families are no longer happy as before.

Photo 19:

Two young Lihirian men, under the influence of alcohol and in the process of looking for more alcohol. Alcohol consumption and abuse has increased rapidly on Lihir and is causing a lot of social problems in many village communities.



Alcohol abuse is particularly a big problem in the directly affected villages of Niolam island where compensation payments have been high and stores selling liquor are easily accessible. Furthermore, the same woman I interviewed complained that it is becoming a common practice that whenever husbands have a break or a day off from work, they spend much of the time drinking beer with their friends rather than spending time with their families or doing traditional work. Such lack of support and assistance from husbands is making women's lives very difficult.

Problems alcohol has brought into some village communities include social disorder and breakdown of good cultural values. Many young men and women alike, after being exposed to other cultures and western concepts of living, and with so much money to spend on alcohol and other western luxuries, are no longer listening to their parents or village elders as before. Many no longer show interest in learning traditions and morals from their mothers and fathers.

It has become a common disease that more young men are resorting to alcohol when they want to sort out a problem. This new attitude, sadly enough, does not help but creates more problems for the village community. Many young men are saving little money and are spending more on alcohol (Photo 19). In a worried note, an elderly man from Pango village stated that all these problems are happening because *kastom* is no longer strong as before. Some young men even go as far as picking fights with others and causing destruction to village property. For instance, in Putput 2 village an incident happen when a young man came home drunk and with no reason at all caused some damage to his fathers *hausboi*. The parents never made any attempt to stop him because they feared he would physically abuse them. In another incident, a young man from Talis village purposely got himself drunk because he was not happy with what a girl said about his family. After drinking a few beers the young man confronted the girl which later resulted in a big fight between the girl's relatives and the young man's family.

In the same manner as men, many young women, particularly those employed with regular salaries, have begun drinking alcohol and hearsay suggests that a certain number have become pregnant outside of marriage as a result.

6.4.2 Domestic Violence and Wife Abuse

Alcohol abuse has exacerbated another kind of problem for women at home. Most women I interviewed admitted that some of their men, when under the influence of alcohol, engaged in very violent behaviour. Some would turn very aggressive in a short time when they were upset over something. Wife bashing and violent arguments between husbands and wives have become a

common problem in some households in recent months. Some arguments are very unnecessary and are developed usually by men over very little issues, which would never occur when men are sober. As an example, a women from Putput 2 village complained describing that:

> *Sampela taem sapos ol man blong mipela i spak na kam long haus na ol ino laikim kaikai mipela i kukim bai ol i tromoi nabaot ol samting, ronim mipela wantaem ol pikinini na paitim mipela. Mipela i save poret tru taem ol i save spak.*

> *Sometimes when our drunken husbands come home and don't like the food we cook they will throw things around the place, chase us and our children out of the house, or even physically abuse us. We get very scared when they are drunk.*

Thus in addition to worrying about the welfare and wellbeing of the family and children, many women now have to put up with the problems caused by the husbands when under the influence of alcohol.

6.4.3 Cultural Breakdown

The development of the mine has brought all kinds of people from different cultures to Niolam island. In addition to cultures from other parts of Papua New Guinea, western culture is having extensive influence on Lihirians, including food, lifestyle, language, and ways of living.

Beginning with food, although fresh vegetables from their gardens still dominates the diet of Lihirians, the consumption of store foods has increased significantly. Rice, tea and biscuits are now eaten by almost Lihirians every day. Most such foods are nutritionally inferior to traditional foods.

Money is currently the talk of the day for many Lihirian men while gardening, fishing and hunting are forgotten. Money is now the main form of exchange on the island replacing the traditional barter system, where food and artifacts were used. Likewise, the building of new fully furnished houses

for the relocated villagers and availability of other luxury items like television and radio have influenced many Lihirians to live the western kind of lifestyle.

Most affected is the culture and traditional *kastoms* of Lihirians living in Area One, the directly affected area. *Kastom*, as described by two village elders, Felix Rapis and Frederick Kalan, is losing its value and may be forgotten in a few years time if people are not careful. The future existence of their culture lies with the younger generation and it seems many of them are not very keen on observing cultural obligations. Many elderly men in other villages have also expressed great concern about this because they no longer have control over their young men and women. They stress that the downfall of many cultural values has resulted in an escalating law and order problem, as well as the lack of discipline in the villages. Alcohol worsens these problems. Lihir elders believe that *kastom* holds the key to a stable and respectable society. Without *kastom* village communities will lose their value. As one described:

> *Bipo taem kastom i strong ol brata ino save pait bek na ol ino save bekim maus blong papamama. Nau ol i skul liklik, kisim wok, holim wansiling, dring planti bia na ol ino moa ruruim ples o ol papamama wantaem ol bikman. Ol i ting ol moa yet long ol narapela tasol nogat ol bagarapim sidaun blong ol yet na long ples tu. Pasin respek ino moa stap wantaem ol.*
>
> *Before, when custom was strong, brothers hardly ever fought each other and talked back at their parents. Now that they have good education, employment, earn regular salaries and drink a lot of beer, they no longer show respect for village property, parents and village elders. They think that they are smarter than everyone else but, "no", they only make trouble for themselves and the society as a whole. They no longer have the value of self-respect in them.*

Young Lihirians no longer have time for basic traditional *kastom* and cultural practices like gardening, hunting, fishing, handicraft, and *kastom* rituals. Their daily commitment to work and associated mining development activities has denied them the time to help elders with such work.

Other social impacts include a decrease in church attendance by men on Sundays. It is very evident during church services on Sundays that women and children dominate the congregation. Most men are now working on Sundays. A few others deliberately miss church when they have a beer drinking party the night before. Women fear that some men may have developed the idea by which they no longer value Sunday as a day of worship. They are also concerned that men's absence from such services will influence the disintegration of their community. The church has been an important part of life for Lihirians for many years and it encouraged and maintained harmony in village communities in the past.

In terms of family values, most women I met complained that they no longer had sufficient time with their husbands because the husbands were always away for employment and other business work. As Lihirian women commonly expressed, referring to their husbands, *"They go for work at night and come back at night. The children hardly see their father's face at daylight".* This has been very difficult for the women to handle because, besides their doubled workload, they no longer live as a family as before. Most of the time now they have breakfast and evening meal alone with their children.

6.4.4 Increased Workload for Women

The development of the mine has dramatically increased women's workloads at home. As a direct result of men's absence from home there is extra work for women in areas such as child-care responsibilities, domestic tasks, and gardening work.

The recruitment of most men for employment in the mining workforce has meant that men are no longer available at home to carry out their responsibilities. In addition to those men working for the

mining project, some are doing their own private business work. Employed men and women leave very early in the morning for work and come back home very late in the afternoon. Furthermore, they work seven days a week having only six days off every six weeks and have little time to do gardening, hunting, fishing, gathering and handicraft work at home.

Therefore, the system where work was once shared between men and women is no longer observed as before. Most women are left at home to take care of all household matters and child-care responsibilities. Similarly, most gardening and village community work is now women's sole responsibility. For example, in the gardens women are already involved in clearing new garden areas, making fences around the garden, breaking soil for yam planting and planting bamboo poles for young yam creepers to climb on. Women have no choice but to take up work that was once done by men to keep the family going with fresh vegetables. Even when families now have the money to buy store foods, many men prefer to eat home grown vegetables thus they insist that their wives keep up the gardening work. This is the same with most of the work once performed by men in other areas such as hunting, fishing and gathering, and community work (Photo 20).

Men's daily absence from home has also increased women's responsibilities in child-care. Although child-care was women's traditional responsibility, sometimes men assisted their wives in looking after children. For example, a husband would take the children away from their mother while she prepared their evening meal, or would fetch some bush herbs for a sick child. That husbands assist with this work is no longer the case.

The overall increase in women's workloads has constrained women from engaging in other development activities. Many women I interviewed expressed concern that they were so tied up with household and child-care responsibilities that they had very little time to do other things like handicraft and money earning activities, let alone participating in decision making regarding the mining development. As a Kunaie woman described, *"Bai mipela i painim liklik wan-siling olsem wonem, taem ol pikinini i paspas wantaem mipela?" (How are we going to earn some money if we*

have all these kids to look after?) This is supported by the fact that Lihir families are big with an average number of 6 to 10 children. Therefore, with so many children to look after women have no choice but to stay at home and take care of the children and family welfare.

Women in the immediately affected villages like Londolovit, Kapit, Putput, and Kunaie raised concerns that their workload in the home has intensified leaving them with hardly any time to attend to their gardening activities. This is due to the introduction of new household work like regular cleaning of their new houses and many more clothes to wash. For instance, the exposure of Lihirians to western culture which influences them to buying and wearing more clothes each day has had the women with loads of laundry to do.

For the few educated women who are now employed with the company, their responsibilities have escalated too. They are now experiencing what western women call 'The burden of the double day'. For example, they work eight hours each day for an income and still have to care for the sick within the family, cook, clean and do gardening activities. The expectations and pressures put on them by their husbands, parents and sometimes their uncles, makes their workload very difficult to handle. For instance, during my research I witnessed an argument between a woman and her husband. The wife was employed by LMC and came home quite late that day. The husband was not happy because food was not ready when he came home from the garden. When the wife arrived the husband immediately confronted and scolded her saying:

> *Yupela i save wokim wonem tru na save kam late long avinun? Yu save olsem yumi gat ol pikini tu o nogat? Tokim husat em Boss blong yupela long tingim olsem yupela sampela em ol mama na mas kam hariap long ples long kukim kaikai blong famili....yu kam late gen bai mi kam paitim yu wantaem boss blong yu!*
>
> *What sort of work do you people do that you come home this late? Do you remember that we have children to look after? Tell whoever your boss is to*

remember that some of you are mothers and should come home early to cook for the family....if you come home late again I will come and physically abuse you and your boss!

Many employed women whom I met expressed similar treatment from their husbands. A few of them have already started talking about resigning because they could not handle the pressure and the amount of work they carry each day.

6.4.5 Women's Increased Dependency

Women's dependence on men has increased with the development of the mine. The situation is that most men are working and earning regular salaries while women are at home doing subsistence work. Furthermore, as discussed above, women's total commitment to child-care, household and gardening work has made it almost impossible for them to get involved in any money generating activities.

With little chance of gaining access to earning cash income, women have become dependent on their husbands to provide money for the family. Men have thus increased their power and authority over women. For instance, most control the family account and make the final decisions over its use. In most cases when a couple goes shopping, the husband holds the spending money, buys goods and lets the wife collect and carry the goods home. Sometimes the husband can spend family money on alcohol and get away with it because the wife does not want to cause a public argument.

Furthermore, women's dependency on men has created additional problems where they lack self-confidence and strong willpower to stand on their own two feet and participate in development. Lihir women's greatest weaknesses are lacking self-confidence and self-esteem and their increased dependence on men has not helped this situation.

Photo 20: Women of Lataul village sewing sago leaves for the roof of their village meeting house. It is becoming common in most villages that only women and elderly men are doing village community work.

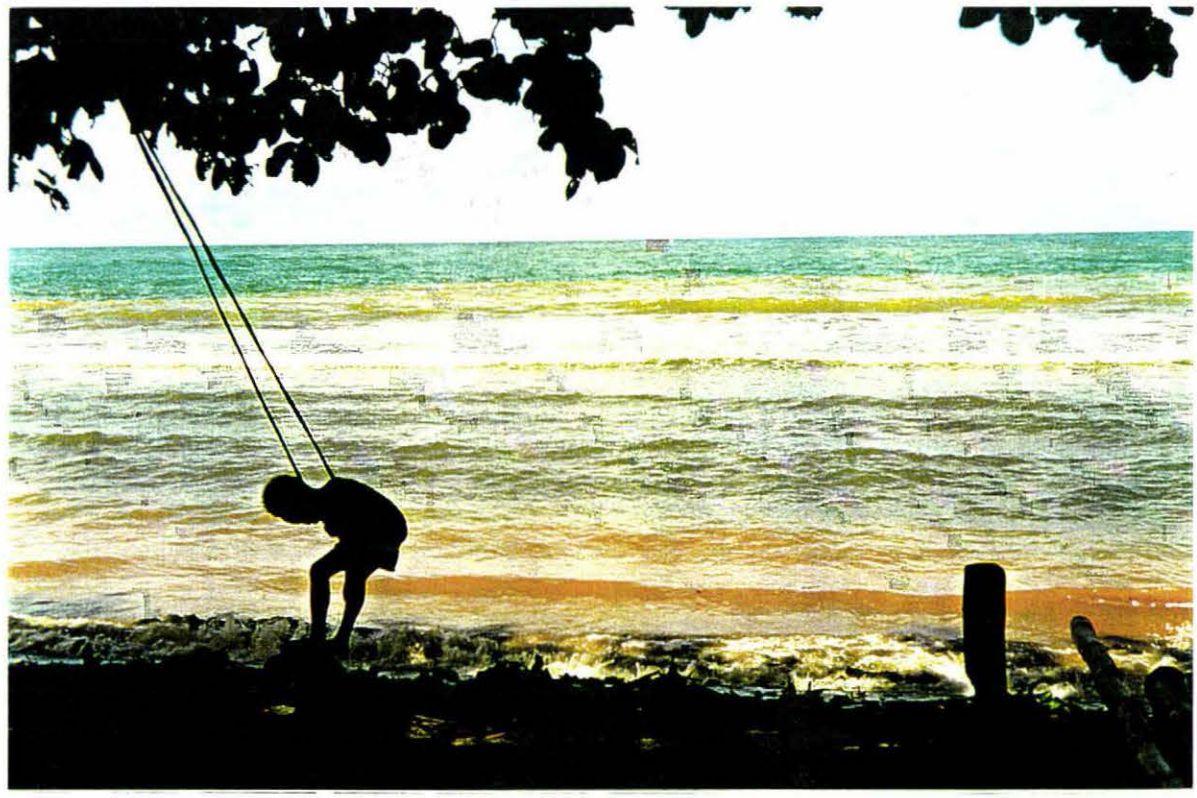


Photo 21: Silt sediments have polluted the sea near the mining area. This is becoming a common sight for the directly affected villages like Londolovit, Kapit and Putput 1 & 2. LMC prevents it from spreading further into the ocean by laying silt bags in the sea.

6.4.6 Natural Resources: Land and Sea

As stated in Chapter One of this report, land is the most important asset for Lihirians. Therefore, the alienation of land for the mining operations has left many, especially women in the directly affected areas of Niolam island, feeling rather empty and hopeless. Most men in the directly affected area are too preoccupied with the mining development and the economic benefits it is bringing and have yet to be concerned with what is happening to their land.

The relocation of villages and use of former agricultural land for the mining development has decreased land for gardening in the directly affected areas. Women, especially from Putput, Kapit, Londolovit, and Kunaie villages are struggling to produce good quality and sufficient quantity of vegetables for their families. Many are beginning to recultivate areas they had once used for vegetable gardens. Although these less fertile plots of land still produce vegetables, women are concerned that they will soon have no more land suitable for gardening. Women are really feeling the impacts because gardening has been the main part of their daily lives for generations.

Even though people have been fully compensated for the land in monetary terms, for women, the loss of land has had a direct impact on their status. For example, traditionally they had a certain status associated with the land because land was passed through the mother's clan. This system allowed them to posses certain rights over their *tumbawin* land. Accordingly, to take away their land is to leave the women with nothing. Land, to a Lihirian woman is a very important asset.

The loss of their land also means that they no longer have land for their gardening activities. It is now becoming a common sight for women to be seen at home almost every day because they no longer have access to *tumbawin* land for gardening. Many women in the directly affected villages are now experiencing the situation. Some even expressed that:

> *Nau mipela i sindaun nating stret olsem ol longlong bikos mipela inogat moa graun long mekim gaden na ol kaen wok olsem.*

Now we have nothing to do and we look like fools because we no longer have the land to make gardens and other activities like that.

In addition, women in Lihir take a lot of pride in what they produce from their gardens. For example, the status of a particular women can reach a certain height if she produces a good harvest for a feast. A good harvest would involve producing better quality and bigger yams from their gardens. Any woman in this category would become the centre of other women's talk and praise for a week or a month. Therefore, the loss of land affects women's pride in gardening activities.

Furthermore, most of the women I met said that, *"We will be nothing without our land"*, meaning, their lives depended very much on the land. As far as the women of Kunaie, Londolovit, Kapit and Putput are concerned, they felt really hopeless without land for gardening. As Macintyre (1995:44) describes, *"The land that is lost to the mine is land that women and their families had assumed would be there for their use, forever, as it has always been"*. The loss of land is a great loss for the status of women in Lihir society.

The mining development has also led to degradation and pollution of the land and sea. With massive infrastructural development going on, top rich layers of soil are bulldozed making the land vulnerable to erosion and soil degradation. This has led to the pollution of rivers, streams and nearby sea with silt sediments (Photos 21). However, LMC's environment management department is attempting to control this pollution (LMC Annual Report, 1995:15). Every day, officers from the department go out and measure the level of silt sediments flowing down Londolovit river and into the sea. Silt bags are laid some 10 to 20 metres out in the sea to prevent silt sediments from spreading further into the ocean. This has been successful so far.

Hunting grounds, wildlife, and other natural resources in the directly affected areas have also been affected. For instance, the presence and noise from machines is driving away wildlife from their natural habitats. This has made it difficult for neighbouring villagers to catch wild pigs and birds.

In addition, the clearance of land at Luise caldera has destroyed the breeding habitat for wild fowls. This is also where neighbouring villagers of Kapit and Putput hunted and dug for wild fowl eggs. In the same manner, bush materials, which are useful for handicrafts and building work, have also been destroyed. A good example is the clearing of bamboo, an important building material, at Luise caldera area.

Associated with the impacts on natural resources, most Lihirians have abandoned their cash cropping activities. Many coconut and cocoa plantations are no longer tended and are covered with undergrowth vegetation (Photo 11). Although transportation services has improved Lihirians are not showing any interest in making copra and cocoa for selling. Cash cropping involves a lot of hard work and with more Lihirians earning regular wages from the mine, they see less benefits in their cash crops. Lihirians prefer to do other business activities and work for regular wages than labouring at coconut plantations.

While Lihirians in Area One are receiving compensation for noise, air, land and water pollution associated with the mining development, this cannot replace the value that these natural resources had to Lihirians. While the men seem too preoccupied at present with earning cash to worry about this, it is the women who are becoming increasingly distressed at what they see as the destruction and alienation of their resources.

In the following section, the opinions of men and women with regard to the mining development are studied in more detail.

6.5 General Opinion of Local People on the Mining Development

Many Lihirians I talked to had a positive opinion about the mining development and what LMC has been doing to bring development to Lihirians. They were generally happy with the gold mine project and the spin-off developments it brought along with it. They knew that the development of the project would bring in other social and economic development as well as improved basic services

to their communities, which, they were happy to admit was already happening. What were some of the reasons for their positive opinions?

As discussed in Chapter One, back in the early 1980s or before the mining development, many Lihirians I met described their situation as tough and difficult in terms of gaining access to basic services like education, health and transportation. Furthermore, economic activities were poor and a lot of Lihirians found it very difficult to earn money. Many admitted that the development of their gold resource was an opportunity they could not afford to lose. They felt they needed such a project to improve all basic services and general development for their society.

As Lihirians have expected, basic services like road, sea and air transport, health services, education, and welfare are now being greatly improved (Table Nine). Besides, other developments like general community assistance, youth, sport and women's programmes, business and employment opportunities have also been established and this has contributed in improving the living standards of the local people. In comparison with other people in New Ireland Province (NIP), Lihirians are now well-off in terms of money earnings, basic services, employment and business opportunities and infrastructural developments.

As acknowledged by many Lihirians, however, all the benefits they are now experiencing would not be possible without the intelligence and firm stand taken by Lihirian leaders who were represented in LMALA and NDA. They did well in negotiating the best possible benefit package for themselves through the IBP agreement. In terms of interests and benefits, the leaders made sure they, as representatives of the people, knew where they stood and where the mining company and the government stood before they allowed the project to develop. Generally, most Lihirians are happy with the development of the mine and the benefit packages.

Table Nine: Expectations of People on Services to be Provided by LMC.

Villages	Services already provided	Services they would like to see
Directly affected villages: Londolovit, Putput 1 and 2, Kapit, and Kunaie	. water supply, . road and sea transport, . health and education services, . road link, . business ventures, . laundry and shower blocks, . modern houses for Kapit and Putput 1 villagers, . new church building, . employment.	. training schools for school drop-outs, . outreach family planning programmes, . modern standard housing for all people, . good land to make gardens, . bring health services to village, . needed a residential nurse to attend to villagers health needs, . bigger health centre and professional staff, . a secondary school, . home economic training school, . agriculture training, . sporting facilities.
Villages outside directly affected area: Suen, Banam, Lamboar (Mazuz), Palie, Wurtol, Talis, Pango, and Komat	. road and sea transport, . employment, . Aid post, . building materials for a new health centre, . road link, . education facilities, . health centre, . parish church, . vocational school.	. more public transport, . more health staff, . outreach family planning programmes, . school fee subsidies, . secondary school, . modern houses, . home economics lessons, . proper and continuous water supply, . agriculture training school, . business training school,

NB: While, as stated in Part Two, LMC sees it as a priority to implement family planning programmes, there were no village outreach family planning programmes as of April 1996.

However, as admitted by women of Ton village, *"Igat gutpela na nogut blong ologeta wok kamap" (There are good and bad sides of all development processes),* and each individual has his or her opinion about it. Women in each village I visited had different opinions about the positive things they hoped would be provided in the future by LMC (Table Nine). Generally, a majority of the women I met highly recommend that agricultural training school and transportation services be provided for women and children. At present most village-owned trucks are contracted to the mining company for the transportation of Lihirian workers to and from work. Women and other villagers still find it difficult to have free access to the current transport facilities if they want to go to Palie Health Centre, bring their children to school, or bring their garden produce to local markets for sale. They do not want to keep getting the second place choice in transportation. Women also want agricultural training programmes established for them so that they can improve planting and producing quality vegetables to sell at the mine site market. In addition, women are keen on improving their cooking at home, therefore, they felt that regular home economics lessons be introduced for all villages. This would help women keep up with the standard of living and diet in their individual families.

During my visits to villages on Lihir island, I drew up three tables through which I hoped to measure people's opinions about the project and the changes currently occurring. The results are presented in Figures Seven, Eight and Nine. Figure Seven and Eight, were about the opinions of relocated villagers from Putput 1 and Kapit on their new village and company built houses. They were relocated to new village sites and were compensated with fully furnished houses.

6.5.1 Opinions on New Village Sites

From Figure Seven, opinions were collected from a total of 27 Lihirians: 10 men and 17 women. The results presented generally indicate that more men than women were happy with their new village site. This is not surprising as it was men who made the decision that relocation should go ahead. On the other hand, more women than men were not happy. When asked why, the women stated that they no longer have access to land for gardening; banana leaves for their cooking,

particularly *mumu* (earth oven); betel nuts for chewing; coconuts for consumption, and cooking and its leaves for weaving baskets; and many other useful bush materials needed for household work. These women admitted that they regretted moving out of their old village site where most traditional household requirements were readily available. Furthermore, it has been very embarrassing for some of them to continue to ask other non displaced women for needed items.

About 47 percent of the women interviewed, however, had a positive mind predicting that things would work out well in the future if they worked hard in planting new fruit trees and other valued crops near their new village site. In practice this may be difficult, however, as they do not have enough land to relocate their gardens every few years and soil fertility is likely to diminish.

6.5.2 Opinions on New Houses

In Figure Eight, the same number of displaced men and women were sought for a similar opinion on the company built houses which they are now living in. All the men I interviewed had a positive opinion of the company build houses. Some happily stated that they now have the house of their dreams and could not think of anything better. Others even boasted that their wives can now be able to cook such food as rice, vegetables, and boil hot water for coffee quite efficiently in the house using the gas stove provided.

For women, four of them had negative opinions about the new houses, ten of them felt neutral, and only three of them had positive opinions. They all shared the same view that more responsibilities are required of them to keep maintaining the cleanliness of the house. For example, there is a need for continuous wall washing to keep the house walls free from cobwebs and dust, washing dusty glass louvres, cleaning the kitchen area every time they use it, and taking extra precautions for the danger of creating a fire in the house. Many women said they found it difficult to cope with the extra responsibilities. These were some of the many things they never had to worry about when they were in their traditionally built houses in the old village.

Figure Seven: Opinions of Displaced People on their new Village Site

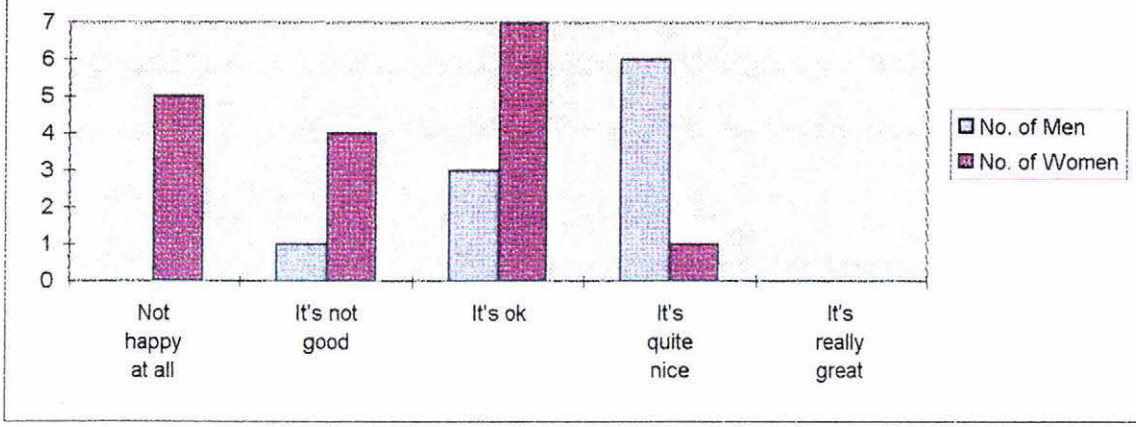
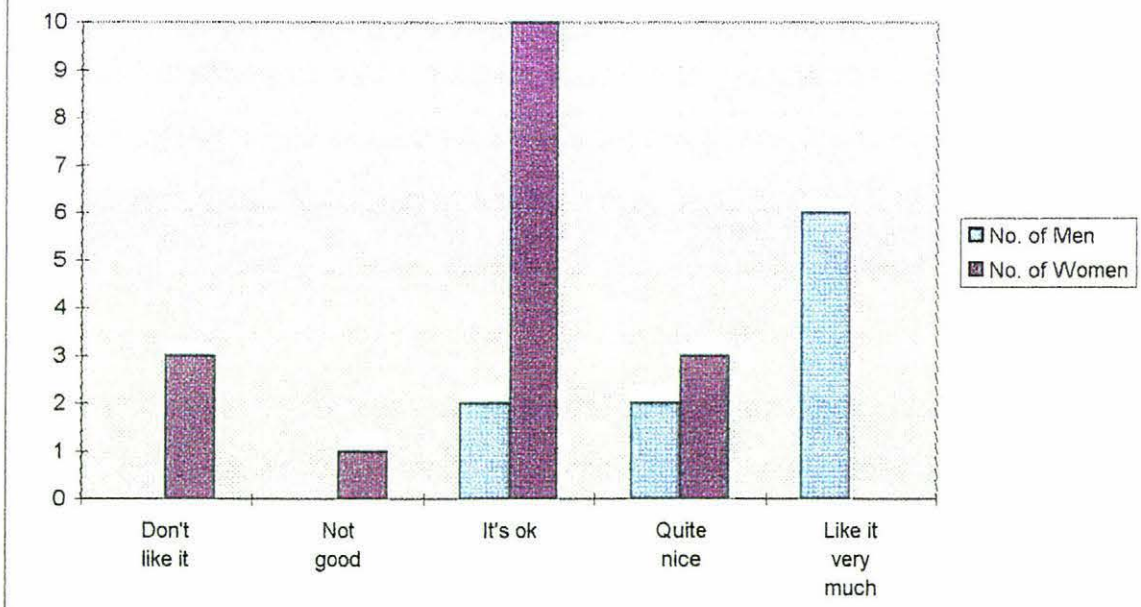


Figure Eight: Opinions of Displaced People on their new Houses



NB: For Figure Seven and Eight, Opinions were collected from a total of 27 Lihirians who have been relocated: 10 men and 17 women.

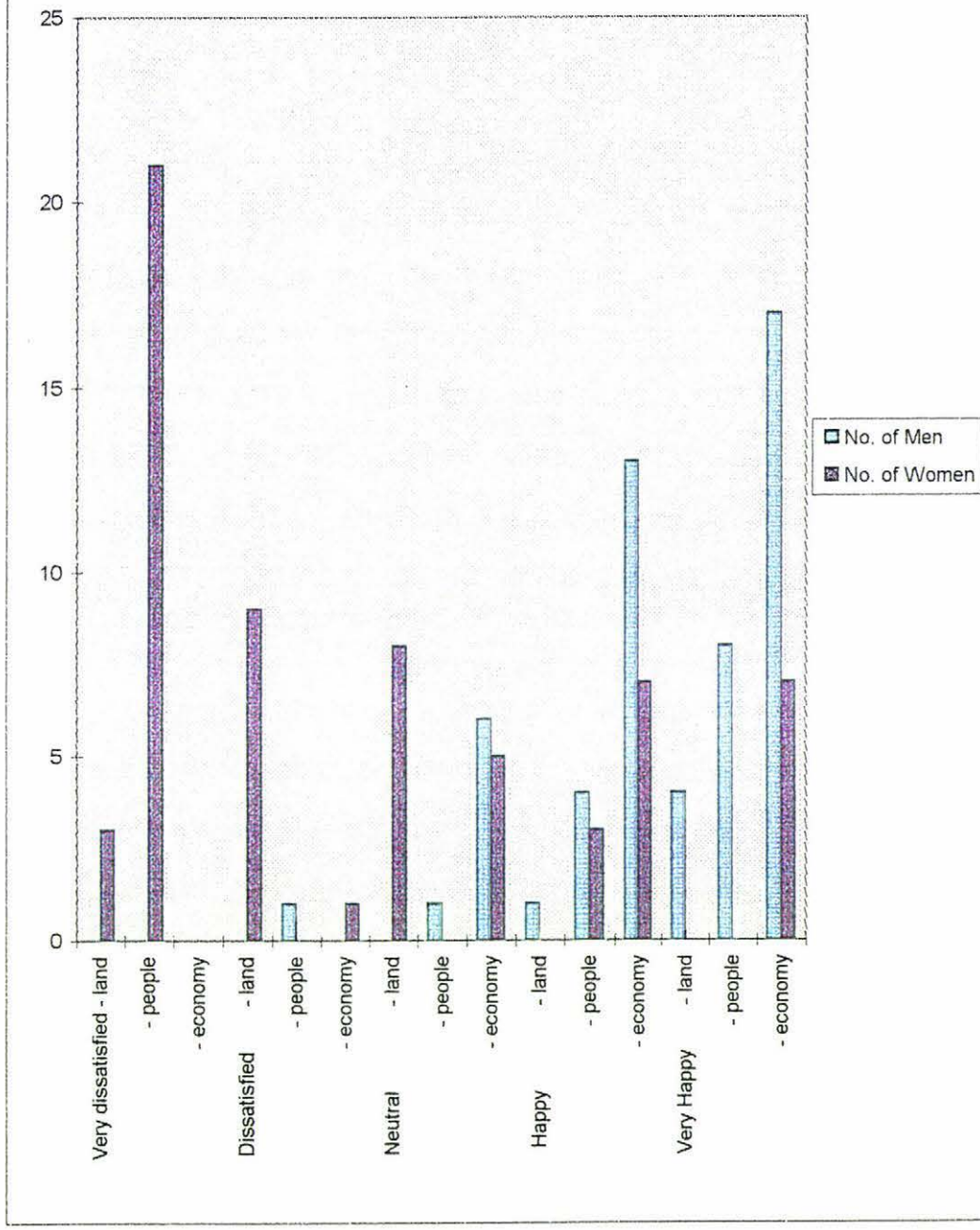
Some women are still scared of using and maintaining the facilities provided in the house. These included the gas stove, septic toilet facilities and fire extinguisher. However, they were happy that LMC provided social development officers who continued to run workshops, giving opportunities for women to learn how to use and look after these facilities.

On a different viewpoint, some elderly men thought that the new system where most husbands now live and spend more of their time in the newly built houses has somehow contributed in degrading *kastom* because men no longer dwell in *hausbois* as before. They were concerned that men were becoming too attached to their wives and are forgetting some of their responsibilities in the *hausboi*. As an elderly man expressed, *"Em pundaun blong pasin tumbuna" (This is the end of kastom).* Furthermore, they fear that when this happens men will loose their traditional status as men and their sacredness. Similarly, the younger generations will probably have no idea about their culture, if they allow things to go as they are going.

6.5.3 Opinions of Lihirians on Changes to the People, Land and Economy

Many Lihirian men and women were interviewed about the changes currently experienced in their society. Figure Nine shows that more women than men were not happy with the changes brought in with the mining development to the lives of Lihirian people and their land. As already discussed, social problems have increased with the mining development and Lihirian women are carrying most of the burdens. Particular changes that women are concerned about included increase in alcohol consumption and abuse, domestic violence, breakdown in law and order, major changes to lifestyle and their inability to benefit from the current development. In addition, Lihirian women are more concerned with land as their form of status and identity in the community and for subsistence gardening activities. As village elder Felix Rapis, admitted, *"Laip blong ol meri Lihir bai inogat mining sapos ol inogat graun blong wokim gaden" (Lives of Lihirian women will be without meaning if they have no access land for their gardening activities).*

Figure Nine: Opinions of Lihirians on Changes to the People, Land and Economy



NB: While around 30 women and 20 men took part in discussions which led to the creation of this figure, some only gave their opinions on one matter (e.g. land), some on two matters (e.g. land and people) and some on all three.

Some Lihirian women, however, are happy with the economic changes the gold mine project has brought to their society. As discussed, the economic standard of Lihirians has greatly improved since the development of the gold mine project. Some women stated that their husbands can now work and earn money for the family. Others added that at least there are opportunities for them to get involved in small-scale and non formal business activities and earn a little money for themselves. For example, many are already involved in selling betel nut, mastered seed and lime at the mine site market. Mine workers buy a lot of betel nut and this has encouraged more women from the three outer islands to come and sell their betel nuts too. This helps them earn extra money for their families.

In the case of men, most of those I interviewed were happy with the changes brought in by the project. They were particularly happy with the changes brought to their economy and the living standard of Lihirians. In a common argument they defended the gold mine project saying, *"Mipela i kisim dispela ol gutpela sevises nau yu lukim na planti wok developmen insaet long wanwan komuniti blong mipela bikos long gold maen projek tasol" (We got all these good services that you see now and all the development projects within each community through the development of the gold mine project).* In short, men are saying that everything else regarding improvements in basic services and development on Lihir island group has been made possible through the development of the gold mine project. A lot of men now walk with their heads high as they have more money to spend, a lot more opportunities to earn money and do business, and enjoy the services provided by the project.

Only a small number of men were not happy with the changes brought to the lifestyles of the people. The majority of these men were the elderly men. They were particularly concerned about social disorder in the community, the increase in undisciplinary behaviour by the younger generation, and the decreasing cultural values. *Kastom,* they fear, has been challenged and degraded with the progress of the current development.

6.6 Summary

As experienced by indigenous peoples in other mining areas, the infrastructure developments following the mining development on Lihir island have brought changes to the lives of local Lihirians. Many Lihirians have received a number of benefits including economic benefits and social services since the development of the mine. These include improved health and education facilities, transport and communication services, water supplies, business and employment opportunities and good housing for some. For instance, Lihirians no longer have trouble finding a cash income because most men are employed in mine related activities with regular wages and receiving compensation money as well. Besides, they can also travel within or out of the island with less difficulty because transportation facilities have been improved. Overall, the living standards of many Lihirians have been improved with the development of the gold mine project. The Lihir management company has made this possible by providing funds and logistical, as well as technical assistance. Many Lihirians feel they are much better off because of the improvement of the basic services on the island.

However, although the standard of living in Lihir society was greatly improved due to the mining development women are not receiving the same benefits as men. There has emerged an unequal distribution of benefits where, for example, more men are educated and are being trained for work in the mine, have received employment, have higher wages, have control over family income, have control over local transport system and used them for their advantage, and have been very involved in business activities. A majority of the women are at home doing household and domestic work. They have enjoyed fewer benefits than men since the mining development started.

There have also been negative impacts which are causing a lot of social problems for the village communities. The main ones include alcohol abuse and domestic violence, cultural breakdown, an increase in women's workloads at home and their dependency status, and the impacts on the land. Clearly the negative impacts of the mining development have been felt differently by men and women. Lihirian women seem to be carrying a greater burden of the current development than men, even though most women are not directly involved in it. For example, many wives have experienced

more physical abuse from their husbands as the husbands become more involved in alcohol consumption, and women's workload at home has increased since husbands are no longer around to help. The development of the mine has particularly changed the traditional lifestyle of Lihirians and it will probably never be the same again.

With traditional *kastom* so strong men continue to maintain their power and authority over women. Furthermore, the establishment of the mining project has increased men's status in the society as their access to cash has increased, while many women are slowly being stripped of any status they had. The loss of land for the mining project has robbed many women, particularly in the directly affected area, of the little status they had from producing good crops. The loss of their land means the loss of their pride and status.

With regards to the opinion of Lihirians on the gold mine project, most men are happy and have a very positive view of it. They are generally pleased that the mining development has brought along important basic services like health, education, transportation, communication, and water supplies. All these were poorly provided and access to them was very difficult for most people prior to the mining development. However, many women are concerned because some of the changes like the new village sites for displaced people, new housing, and changes to people's lives, their land, and their economy are causing more problems and difficulties for them. Generally, women are experiencing a lot more responsibilities at home with the current changes and are finding it difficult to cope with the changes. Most people have mixed feelings of excitement and confusion about their future with regard to the mining development.

CHAPTER SEVEN: ANALYSIS AND CONCLUSIONS - HAVE LIHIRIAN WOMEN BEEN EMPOWERED OR DISEMPOWERED BY THE MINING DEVELOPMENT?

7.1 Introduction

This thesis set out to identify whether or not women in Lihir were being empowered by a major mining development occurring in their island group. As discussed in Chapters Two and Three, women as a vulnerable and disadvantaged group have often not been included in major decision-making and negotiation processes concerning mining development. Meanwhile, women have carried most burdens of this development. This is an unjust and inequitable situation which undermines the idea of development as a means for improving people's life.

Chapter Three also showed, however, how Friedmann (1992), Moser (1989) and Karl (1995) saw empowerment as a vehicle towards an alternative form of development which benefits all peoples. This chapter will analyse my research findings of Chapters Five and Six according to this concept of empowerment, before considering how my research has contributed to the field of geographic studies of mining.

7.2 Has the Mining Development in Lihir Empowered or Disempowered Women Relative to Other Groups in Society?

As discussed in Chapter Six, the mining development in Lihir has brought both positive and negative changes to the lives of Lihirians. The positive changes are based around the general improvement in basic services and the standard of living for most Lihirians, while the negative changes include the social problems that have created disharmony in households in many village communities. Clearly, however, the effects of the mining development are felt differently by different groups of people in Lihir society. For example, the effects on men are different from those experienced by women and similarly, the effects felt by the elderly are not the same as those felt by the younger Lihirians.

This section analyses the impacts of the mining development on these different groups, and whether or not Lihirian women have been empowered psychologically, socially, economically and politically by the mining development. My analysis is based on the empowerment framework I devised (Table Five), which is made up of the four bases of power. This will help to identify whether or not the mining development has encouraged the concept of empowerment.

7.2.1 Psychological Empowerment

As described by Moser (1989) in Chapter Three, women's triple roles are major constraining factors contributing to women's inequitable participation in development. For many Lihirian women, their increased domestic workload and lower status in the society have handicapped them from participating in aspects of the mining development, including participating in decision-making and skilled employment, which men have been able to benefit from. In addition, their ability to think of alternative development strategies has been weakened as they become overwhelmed with the pace and extent of change and their lack of control over this in the current process of development. Many have become very demoralised with their situation and some are feeling very miserable about it.

What is particularly discouraging for most Lihirian women is that they have been placed in a situation which they find very difficult to get out of. Like other women in mining areas of Third World countries, most Lihirian women's dependence on their men has increased dramatically with the current mining development. For example, many women from the immediately affected area of the mining project have lost their gardening land and have a limited area for their vegetable gardens. The alienation of their land for the project has undermined their role as the provider of the household and replaced it with the role of being a dependent. They now have to wait for housekeeping money from their husbands so they can buy food from the store. In this way women are missing out on any possibility of taking control of their lives and doing things on their own. Some of them, particularly those in the directly affected area, are becoming so dependent on men that they lose their self-confidence and self-esteem quite easily, making it almost impossible to get themselves organised to make improvements to their current situation. Some have become reluctant to think

and do things for themselves because they have become used to decisions being made for them by their men. Most simply do not have the courage to voice their concerns, especially during decision-making processes, important meetings, and in developmental planning programmes for their communities, because they are psychologically weak.

In terms of status, most Lihir women's status has gone from bad to worse with the current development. Traditionally, women's status was low in Lihir society, but they did have certain rights over land and property. This status was recognised to a certain degree by men. Furthermore, land also contributes to women's pride as they gain respect for what they produce off the land. The taking away of land for the mining development has created a feeling of emptiness and hopelessness for most women in the directly affected area. Land is the only asset which Lihirian women possess and to take it away is the same as stripping off women their status and identity.

Another example of the psychological disempowerment of women can be seen in the restrictive cultural ideologies which prevent women from taking up employment and training opportunities offered by LMC. Over 90 percent of the jobs currently offered in LMC and its associated companies are held by men. This reinforces women's dependency on their husbands for cash income. In addition, this situation has weakened any possibility of them building their self-confidence through becoming self-reliant.

Disturbingly, rather than bringing women together to help overcome their problems, this psychological disempowerment has entrenched divisions among women. There is an attitude of distrust among women and a very negative attitude towards women participating in and benefiting from the mining development. A good example of this lack of unity is shown in the situation of *Petztoreme* women's association. The association has ceased to function largely because the majority of the women do not believe in themselves and do not co-operate well together. The association was set up to build women's solidarity with other women and their self-confidence, however, its failure has weakened the possibility of them achieving such a goal.

In addition, Lihirian women's traditional dependence on men to think and speak for them has intensified. Women were not directly involved in decision-making processes concerning the mining development. Now everyone looks to young male leaders to make decisions on the mine. Women's concentration in jobs that are generally viewed as subservient types is not helping to build their self-confidence and their psychological empowerment at the present stage either.

On the other hand, however, given the restrictive cultural context, the development of the gold mine project has brought hope to some Lihirian women. Their hopes are based on economic improvements and educational prospects for their children, particularly their daughters. They hope that a change in lifestyle which is occurring in association with the mining development will bring changes to restrictive cultural practices. For example, they hope that infiltration of western values will mean that men will soon treat them more equally as they feel this is how women in western cultures are treated.

Some young women also hope that they will get a job in the mining project and earn their own money instead of relying on hand-outs from their brothers or fathers. Their hopes of getting a paid job have certainly increased. Furthermore, a growing number are going through basic secretarial and that on the job training programmes which give them a better opportunity to get a job with LMC or an associated company. Many believe that if they earn their own money, then the likelihood of them becoming more independent will be a reality.

For most Lihirian men, there has been a dramatic build up in terms of their self-confidence since the start of the mining development. This is reflected in their dominance in mining negotiations, decision-making and signing of agreements leading to the commencement of the mining development. In addition, men's vigorous involvement in business activities and employment in the mine have put them in an advantaged economic position where their confidence level has increased. Men's dominance in planning and decision-making for the household as well as the clan, the village community and the Lihirian society as a whole has been entrenched.

The rise and success of young Lihirian male leaders who did very well in negotiating the best possible benefit package for Lihirians has, however, left many elderly men psychologically powerless. Most elderly men have lost their credibility to be relied upon to do the thinking, planning and decision-making for their communities. Their self-confidence to lead in this new era has taken a downturn as younger Lihir men have taken over leadership concerning most development activities. It seems they are losing their ability to keep up with the expectations of most Lihirians, who have turned their attention towards the younger men who are better educated and are seen as dealing effectively with many development issues concerning the gold mine project. The status of elderly male Lihirians is being threatened.

7.3.2 Social Empowerment

With their psychological power generally getting weaker, it would be difficult to expect Lihirian women to have strong social power. Social power refers to their ability get involved in social activities in their communities, to have their status in the society recognised, to have strong working relations with other women, to have freedom of movement, and to be able to share equally with men all domestic work. As described in Chapter Six, every aspect of women's social power has weakened since the commencement of the mining development. For example, their increased workload and time constraints have handicapped most women giving them very little opportunity to be involved in any organised groups, development activities in their village community, or the mining development. In general, the domestic roles of women have intensified with the current development and this has made their position more helpless than hopeful. Heavy workloads are constraining women from taking part in important programmes which have been designed to help improve on their living standards, for example, workshops on home economics training programmes and health clinics, which are now run on a regular basis.

In addition, women's lack of co-operation with each other has resulted in the breakdown of *Petztoreme* women's association and thus their solidarity base. Furthermore, their status and identity in the society have been degraded as a result of their gardening land being taken away for

the mining development, especially for women in the directly affected area. Because their husbands work away from home so much now and some come home drunk, stress within the household has increased and there has been a breakdown in communication between some spouses.

The recruitment of most men for employment in the mining project, which sees them leaving very early in the morning for work and coming home late in the afternoon every day for seven days a week, has denied them the time to be with their families. These men are no longer enjoying the company of their family members, for example, fathers with their wives and children, and sons with their parents and other brothers and sisters. For most men and women in this situation, it seems there is no longer a feeling of togetherness in their families. This is a social setback for members of the family.

Men's daily absence from home is threatening the stability of many families, as their control over children diminishes. Women cannot always help very much in this area as they are too preoccupied with household and productive work. In addition, Lihirian children are missing out on the rich cultural knowledge that their fathers would have passed on to them in the past. Many children no longer receive the kind of attention and care from their fathers that they used to, and the chance to build an intimate relationship with their fathers.

As described in the framework (Table Five) in Chapter Three, women's social power will not improve unless common understanding is developed among women themselves to encourage them help and support each other. They need to have more freedom to participate in women's groups and engage in a wide range of development pursuits.

Women's social empowerment has been impeded, however, because they have been restricted to a certain degree from venturing out and doing something different from their usual domestic duties because of *kastom*. Some are very much controlled by their husbands and relatives and cannot do anything freely without their consent. This situation is becoming more complex for women as the

mining development gets bigger and men's expectations of them to perform traditional roles increases. As some women described:

> *Mipela i stap long han blong ol man tasol. Sapos ol i tok long mipela i kuk bai mipela i kuk. Sapos ol i tok bai mipela inoken go long gaden em bai mipela ino inap go long gaden.*
>
> *We are under our men's authority. If they want us to cook, we will cook. If they tell us not to go to the garden, we will not go to the garden.*

Life is getting tougher for women of Lihir as some of their men become more possessive and inconsiderate of their rights. Some men have gone to the extreme of becoming physically abusive towards their wives when their wives fail to live up to their expectations. Many wives are now reluctant to engage in new activities outside the home for fear of being abused by their husbands.

In terms of work distribution, there has been no equal sharing of work, both paid and unpaid, between Lihirian men and women. Lihirian women have been burdened with most unpaid domestic work at home and are generally occupying subservient and unskilled jobs at the mine. This situation has contributed to the social disempowerment of Lihirian women.

7.3.3 Political Empowerment

As described by Friedmann (1992) in Chapter Three, with a weak base in women's psychological and social power, it is difficult for them to achieve political power. It has been identified that Lihirian women are individually weak and for them to have more say about the direction of development, a group effort is needed. However, their failure to trust each other, co-operate and have confidence in their leaders has obstructed them from achieving any political goals. This is shown through the fact that their solidarity base, the *Petztoreme* women's association, is no longer functioning as it should do.

The mining development has entrenched women's lack of political power. For instance, their increased workload and time constraints have often prevented them from participating in community and higher level meetings. Similarly, the fact that men only have been listed as leaders on official LMC documents and agreements has marginalised women politically. Through their experiences in the mining development, men are now used to going ahead and making decisions on all matters affecting their communities without consultation with their women. Their authority has broadened at all levels of the community: household, *tumbawin* and village level. They make all speeches in meetings, take part in all decision-making processes, and take up all representative duties on behalf of their household, *tumbawin,* or village. Moreover, they hardly consult with women on important issues because they think women are not capable of getting involved. In addition, LMC acknowledged Lihirian men's leadership roles and is also contributing towards their entrenchment by dealing with only male leaders in negotiations relating to the social, economic and political development of their society. It seems that younger men have built on the advantage of their traditional leadership status and are achieving better and stronger leadership skills from their current experiences.

Meanwhile, with their low self-confidence most women have found it hard to speak their minds about issues, voice their concerns to authorities and to demand that they take part in decision-making bodies. With their lack of political status, Lihirian women are becoming more vulnerable and susceptible to men's exploitation and suppression. They will continue to experience more hardships as a consequence of the mining development if they are not represented in the political arenas of their society soon.

On the other hand, Lihirian elderly men are loosing their political power in the society as the mining development progresses. Even though some were influential in the initial decision-making stages of the gold mine project, their authority in the society is getting weaker every day. Most no longer get involved in decision-making processes or participate in decision-making bodies because they are no longer dealing with traditional issues but with contemporary developmental issues, for example, like

writing business contracts with the mining company, which they have very little knowledge about. They have lost their political status while the younger Lihirian men gained political status. Furthermore, most Lihirians no longer look up to the elders for leadership. The development of the mine has degraded the elderly men's political power to lead and make decisions.

7.3.4 Economic Empowerment

Lihirian women's position in the current economic development associated with the gold mine is poor. Most women are currently experiencing a second class kind of situation where their participation in the mining employment sector as well as in business development activities has been severely restricted.

Generally, equality in the current distribution of jobs and wages is a long way off being achieved, particularly for Lihirian women. With lower education levels women are disadvantaged in competing with men for better paid jobs. Most women who have found employment because of opportunities created by the mining company, even those with skills, are doing subservient kinds of work as office secretaries, typists, receptionists, nurses, and general cleaners and labourers. Furthermore, most are earning lower wages than male employees. Although some good opportunities have been provided for them to get better jobs and to do business, the negative attitudes of men and their lack of self-confidence will continue to hinder their attempts to benefit from such opportunities.

For Lihirian men, more of them are employed than women. Because more Lihirian men generally have a better educational background and more experience in paid work than women, preference has been given to them for skilled and semiskilled work for the mining project. Likewise, due to the current phase of development, which is construction and infrastructure work, preference was once again given to men as the work involved was tough and was considered more appropriate for men to handle. These factors have provided more opportunities for Lihir men to be recruited for on the job training and to get employment in the mining project.

A disturbing factor here is that the gap between men and women in terms of equal distribution of labour and wages is slowly widening in favour of men. It could take a long time for Lihir women to be able to get more challenging jobs and higher salaries. This all depends on how well the current situation of women is addressed, including cultural barriers to employment, potential sexual harassment in the workplace, provision of child-care facilities, and how well their daughters do in education.

In terms of local business, only men's names are registered and acknowledged as owners and managers. It is also becoming very common that men's names are referred to as owners of a property, a business group, or the family wealth. Even land is registered under men's names, regardless of traditions which see women as inheritors of land. This practice has given men more pride and energy to pursue their interests in business development, while impeding women's economic empowerment.

With most men employed and earning regular and higher wages than women their control over family income has intensified. This supports men's claim that they have always been the head and the breadwinner of their household. In the family, most Lihirian women hardly have a say on how the family income is used, even when women members of the family do contribute substantially to it. Men's economic power further disadvantages women as it allows the men to spend most or all of their pay packets on their own enjoyment, for example, on alcohol, while their family's needs are neglected. Women feel powerless to stop this so they mostly just complain amongst themselves.

The recruitment of almost all the men for employment has resulted in women spending more of their time doing domestic work. Women's workloads at home have increased enormously since the mining development began on Lihir. The effects of this have been experienced particularly by women in villages directly affected by the project. Most men from these villages are employed by LMC and contractor companies and daughters are getting involved in employment, training programmes, or enrolling for higher education, leaving many women at home to handle all domestic

and other introduced work by themselves. With the amount of workload they carry, motivation to get involved in the current development has been very low. As some women described, *"Mipela ia, inogat sans tru long malolo o painim wok bikos wok blong mipela i bikpela tumas long haus" (For us, there is no chance to find time for rest or to get employment because we have so much work in the house).*

Similarly, married women who have found employment are experiencing heavier workloads because they are experiencing pressure from their husbands to also perform their roles as wives and mothers. It is not surprising that a few of these women are already talking about resigning. The pressure of work and domestic commitments is becoming too much for women to handle and thus opportunities for women's economic empowerment are not as good as might be imagined.

7.4 How the Findings Have Contributed to Geographic Interest in Mining

As described in Chapter One, Lihir, like many other rural areas in PNG, is geographically isolated and prior to the mining development, services and infrastructure development here was poor. The last few years, however, have seen dramatic changes take place with international shipping and air transport being established, a new town being created, rapid construction occurring around the mine site and an influx of consumer goods being made available. There has been a transformation from a situation of uneven development whereby Lihirians missed out on many goods and services to one where they have been inundated with goods, services, technology and outside influences.

While human geographers have studied such dramatic and rapid change associated with mining development with much interest in the past, as discussed in Chapter Two, they have paid little attention to the gendered dimensions of this change in people-environment relations. This thesis has shown that the inequalities women suffer with regard to the negative impacts of mining development they must bear, and their lack of opportunities to benefit from mining development, are another form of uneven development which can be seen as superimposed upon the uneven development described above.

Clearly human geographers need to pay more attention to the gendered effects of mining development. Below I list some geographical issues concerning the Lihir case study which deserve further exploration:

- despite better transport networks, women's mobility has improved only a little, while men's has improved greatly
- villages are now mainly spaces for women, children and the elderly
- because employment at the mine site is male-dominated work environment, women's behaviour and actions are heavily circumscribed
- the mining workforce reflects the international division of labour whereby it is mainly men in management positions and women are concentrated in lowly paid, low status subservient jobs.

These issues point to new areas of study which geographers could constructively contribute to.

7.4 Conclusions

For Lihirian women, the concept of empowerment means that they should have equal rights and opportunities to make decisions, to have a voice in all issues concerning their livelihoods, to participate fully in decision-making bodies, in planning and all developmental processes. Friedmann (1992) and Moser (1989) both argue that power, wealth and opportunities for social, economic and political development should be shared equitably between men and women. Benefits of development will favour certain groups of people while others will suffer from its impacts if there are social divisions in the society. In the case of Lihir, the gold mine development has entrenched social divisions which significantly advantage men.

Most women in Lihir are psychologically weak in terms of their self-confidence and their ability to believe in themselves and their right to get involved in all issues concerning the mining development. With their cultural positioning, increased workloads at home and their lack of self-confidence,

Lihirian women are faced with a situation where they are socially, politically and economically disadvantaged. Most are carrying the burdens of the negative impacts of the mining development.

The concept of empowerment, as argued by Friedmann (1992) and Moser (1989), should be adopted in situations like this to guide the activities of those planning for development on Lihir: LMC and the provincial government. For instance, these authorities could adopt the empowerment framework provided to identify the issues of concern and effectively address them. The framework is an important tool in sensitive and complex situations like this because it can provide a good direction to authorities to follow while not actually dictating what strategies should be adopted. It is up to the authorities to liaise with women themselves to determine what strategies could work best to improve their situation.

Lihirian men, on the other hand, have generally benefited well from the current development. The benefits most men are receiving include higher status and greater recognition as leaders; favourable employment opportunities and higher wages; local business ownership; access to and control over family wealth; opportunities for external travel; access to gaining skills in many trades; and importantly, increases in their confidence level. Furthermore, the traditional advantaged position they had as leaders and decision-makers has developed richly during the last three years since the mining development began.

In general, men, especially younger men, have been empowered by the mining development while women's disadvantage position in Lihir society has been entrenched, leading to a situation of disempowerment for many of them. Their position in the society, in terms of status and freedom has gone from bad to worse with the current development. Like women in mining and associated developments in many developing countries, more than 90 percent of the women I interviewed in Lihir indicated that they understood the current changes associated with the mining development but were unable to cope with them. They have experienced many negative effects and few positive

benefits. Furthermore, most were unsure of themselves and how they would face the challenges ahead.

What is of great concern is the unchanged attitudes of men with regards to women pursuing development opportunities. Women's greatest fear was violence in the household and this has been seen as a new message from men that they are the boss. All too often men use *kastom* ideologies to control women for their own benefit.

When it comes to the issue of contributing ideas about the mining development, Lihir women are reluctant to come forward. They are generally very shy and are not vocal when in the presence of men. However, they communicate well and work better with women they know, particularly with women from their family line, their clan, village, or church group. The *Petztoreme* women's association most likely did not work because it tried to bring women from too many different backgrounds together, something the women were not ready for. Thus encouraging women to work together at the level of their family, clan, village or church group could be a good way to build up their political power.

Generally, Lihir women have mixed feelings about their place in the current development. Like their counterparts in other developing countries they are keen to participate in the employment sector and other community level development projects but are generally not able to do so due to intense pressure from domestic commitments and *kastom*. Being a woman in Lihir society is not so easy when it comes to the issue of equal participation and development. Opportunities are there but they seem so far away in terms of possibilities for women to achieve them. For women to get practically involved in the mining development they will require a lot more support and understanding from development authorities such as the Provincial government, LMC and Lihir men.

While LMC has implemented some good social policies, it needs to focus more on empowering women to be more in control of their lives, for example, to be able to make decisions, to speak

publically of their grievances, to be able to decide on how many children they should have, to be able to have faith in themselves, and to be able to participate in a range of development processes. Given the current situation of Lihirian women, LMC should design programmes that can concentrate on building their psychological power. Lihirian women need a strong mental power base so as to have self-esteem and self-confidence with which they can decide on their development priorities and work to achieve them. An important approach LMC can take is to concentrate in conducting non-formal education programmes for these women. Social, economic and political empowerment will come in line when women are psychologically empowered, provided that there is co-operation from all the parties concerned: Lihirians (men and women), women's groups, government authorities, Churches and LMC.

It is important that Lihirian women are empowered in all departments of their lives. They are customary landowners and deserve the right to receive full benefits of the mining development. It will similarly be beneficial for LMC in the long run if women are empowered and are happy with the way in which development is progressing. Nasioi women in Bougainville were initially left out of the mining development, treated unfairly by the government and the mining company, BCL, in terms of equity and benefits, and therefore, with their sons they shut down the whole operations of mine (Hyndman, 1994:157;160). LMC should learn from this experience, and see that it is wise that Lihirian women are well consulted and their voices are reflected in mining negotiations and policy documents.

Lihir is a new mining development and LMC should have learnt a lot from other mining projects both in the Pacific and other Third World countries to make sure that a sustainable, equitable form of development is brought to all the peoples in the locality of the mining area. This means that both men and women, old and young alike should participate in decision-making concerning the mining development and share in the benefits from the mine.

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APPENDIX ONE: RESEARCH CONTROL PLAN FOR FIELDWORK

Tasks To Be Completed and Checklists For Interviews:

In Port Moresby

Tasks

1(a) Seek general background information on women and development from women's organisations such as NCW, NGOs, and the Women's Division of the Department of Youth and Home Affairs

(b) collect information tracing the roles and status of women in the country and growth of concern for women's issues

2(a) Find out if any organisations have programmes to empower women with information about large scale development projects like mining, logging and oil palm plantations.

(b) Analyse the general views of these organisation's on women in development and the issue of empowerment and on the effects of natural resource exploitation on women

(c) identify whether or not programmes related to empowerment have been established by these organisations to help rural women

(d) also seek from these organisations the current pressing problems faced by women in large-scale development like the Lihir gold mine project

3(a) interview academics who have done research on GAD in PNG or on large scale developments like mines

(b) interview mining consultants

4(a) get collective views of the New Ireland Students Association members (University of PNG) on the current mining development.

(b) also seek their advice and tips on what and what-not to do/expect/be aware of/careful of when conducting research in the village

5 also seek additional advice from the Dr Colin Filer of PNGNRI before going off to Lihir Island.

Checklists For Interviews (not all questions will apply to every interview):

In Lihir Island

Tasks: (i) villages

1. Assess how much village people know about the mining development taking place on their land and how much they could gain from it
2. Assess the different views of village men and women on the gold mine project, whether or not they are happy with the negotiations
3. Assess possible environmental and social impacts/effects on Lihir people (people in general, as well as women and the youth, in particular), whether they are aware of it
4. Assess the economic benefits of the mine for the people, considering gender equality (who will benefit most)
5. Take note on whether or not appropriate programmes have been designed to accommodate the silent majority - the women
6. Assess and compare gender roles and relations in the household as well as at clan level (whether or not status differs in that area)
7. Check out other past and present development projects in the area which have some component which focuses on women....to get a general idea of the status of women's development before the mine came along
8. In order to get as broad a view as possible on the consultation process and in possible impacts of the mining development, hold personal or small group interviews with:

(a) women's leaders in the villages
(b) village women in general
(c) families (wife/husband/adult offsprings) I may be spending the night with in each villages
(d) bigmen/village elders/elderly women
(e) school teachers
(f) religious leaders
(g) health workers
(h) expatriates living in the area
(i) extension officers
(j) and provincial officials

Task: (ii) Lihir Management Company

1. Collect all written articles and documents about the project, by the company and their consultants
2. Identify what roles they (the company) have played in facilitating the development of Lihir people and what role they plan to play in the future
3. Get views on the company's projection of economic benefits for Lihirians
4. Get the company's projections on possible social and environmental impacts of the project
5. Identify the equity shares of the company/people/government
6. Assess how much the company is investing into the promotion of education, training and other programmes for the village people

7(a) Investigate how much attention/interest the company has shown in encouraging and promoting women related projects
(b) Investigate how/if the company has facilitated women in voicing their opinions on the mining development - women's groups?
(c) Investigate whether or not women are given special attention in the company's workforce/training/other programmes
(d) Investigate how much the company value the perception of empowerment and participation of Lihirians, specifically women

8. Investigate how much the company value the people's cultural values and beliefs
9. Identify those villagers whom the company dealt with in negotiations and agreements
10. Get views of the company on the gold mine project and their dealings with the local people

Ordinary Lihir men and women

1(a) What is your personal view of the gold mine project?
(b) Are you happy with it? Why/why not?
2. Are you a landowner? If so, were you consulted well enough?
3. What benefits and problems do you think would likely occur during the life time of the project?
4(a) [for women] do men still consult with you on land matters? If yes, how effective? If no, why not?
(b) [for men] do you consult well with your women on land matters? if yes, how effective? if no, why not?
5. Are you currently involved in any programme (activities like employment, training, etc.) designed by the company? if so, are you happy with the programme?
6. Do you think you or your children will be given the opportunity to participate in and benefit from activities related to the gold mine?
7. What are the good/bad things you generally see about the current project?.....(use ranking technique)
8(a) How effective are women in contributing to village development projects?
(b) What are some of the major problems and constraints affecting women's participation in

village based development activities?

(c) What are the best possible strategies to make women participate in village development projects

(d) What are the benefits women can gain from participating in development projects?

9. Would you think women in the village level will be confident at all in participating in major decision-making process and other development activities if given the opportunity? If yes, why and how? If no, why not?

General: company and outsiders

1. What programmes or projects have the company designed for the people as a whole?

2(a) How are women involved?

(b) What effects do they have on the lives of women, compared to men?

(c) Has the development project made the issue of gender equality better or worse?

(d) Has the company drawn up long-term plans to assist/support the women cause?

(e) Do Lihir women feel part of the development which is taking place?

(f) Do they feel responsible for their actions?

(g) How much did women participate in the negotiations/decision making of the project?

3. What have participants gained/lost from involvement in these projects, programmes or activities?

4. Are all people in Lihir being collectively self-empowered by the mining development?

5. What effects has the mine has on the people so far (women, men, children, elderly, those employed by the mine, and those not employed by the mine)?

6(a) What are women's major needs and interests?....are these being addressed by the company?

(b) Should the company be doing more to assist women in villages?

Points to Remember During Interviews:

* Annotate notes nightly
* Observe local protocol
* Respect people's feelings
* Interview women collectively, not individually
* Never get involve in village politics
* Be polite always
* Always have enough betel nut to share with research participants or elderly villagers.

TASKS AND CHECKLISTS FOR INTERVIEWS IN PIDGIN

Ol Wok na Halivim blong Mekim Gutpela Askim

Long Port Moresby

Ol Wok:

1(a) Lukluk long ol kaen infomeisen we i toktok long ol meri insaet long developmen long ol bikpela ogenaiseisen olsem NCW, NGO, na long Divisen blong ol meri long Dipatmen blong Yut na Hom Afeas

(b) Bungim ol infomeisen husat i toktok long ol kaen pasin blong wok ol meri i save holim long kantri

2(a) Painim aut sapos igat sampela ogenaiseisen igat ol program long givim gutpela infomeisen long ol meri long ol kaen bikpela developmen progek olsem mining, logging na oil palm plantesin

(b) Bungim ologeta tingting blong ol dispela ogenaiseisen long ples blong ol meri insaet long developmen - olsem ol meri igat liklik pawa o nogat - na tu long wonem samting i kamap bihaen taem ol risos blong graun i pinis

(c) Painim aut olsem igat sampela programs blong givim mo pawa long han blong ol meri i stap pinis o nogat

(d) Painim aut tu long ol dispela ogenaiseisen ol kaen bikpela wari o hevi ol meri i save bungim long ol bikpela developmen olsem gol mine long Lihir ailan

3(a) Toktok wantaem ol save-manmeri husat i wokim sampela lukluk pinis long GAD insaet long PNG o long ol kaen bikpela developmen olsem mining

(b) Toktok wantaem ol consalten blong kampani tu

4(a) Kisim tu ol tingting blong ol sumatin blong Niu Ailan Provins husat i stap long Univesiti blong PNG long kaen developmen bai kamap long ailan blong ol

(b) Askim ol tu long gutpela tingting, long wonem samting long lukaut long en taem mi stap long Lihir aelan

5. askim tu Dr Colin Filer blong PNGNRI long sampela gutpela tingting bifo mi go long Lihir

LONG LIHIR AELAN

Ol Wok: (i) asples

1. Painim aut olsem ol manmeri igat gutpela save long dispela kaen developmen husat i wok long kamap o nogat
2. Bungim ol tingting blong ol manmeri olsem ol i hamamas long dispela gol mine progek o nogat
3. Lukluk long nogut na gutpela blg dispela developmen husat bai kamap bihaen - olsem graun, bus, solowara na ol abus i stap long en - olsem ol manmeri i klia long en o nogat
4. Lukluk long ol kaenkaen gutpela wok-kamap husat bai kamap, olsem ol manmeri wantaem bai igat wankaen maus, wok, na ol samting olsem o nogat
5. Painim aut olsem igat sampela program pinis i stap blong lukluk long ol meri long asples o nogat
6. Painim aut ol kaen pasin blong wok ol meri na man wantaem i save holim insaet na autsaet long haus na tu long clan blong ol
7. Painim aut ol developmen progek husat i stap pinis long aelan na tu ol dispela i stat nau tasol na lukluk tu long pasin blong wok blong ol meri....olsem blong kisim sampela aidia long ol kaen developmen progek blong ol meri bifo developmen blong mine i kamap
8. Long kisim gutpela lukluk long wonem kaen wanbel toktok i kamap namel long ol asples manmeri na company mi mas sindaun wantaem ol dispela laen:

(a) ol leader blong ol meri long ples

(b) ol meri blong asples
(c) ol famili (papa/mama/ol bikpela pikinini) husat bai mi stap wantaim ol long ol wanwan ples
(d) ol bikpela manmeri long ples
(e) ol tisa blong skul
(f) ol wokman/meri blong lotu
(g) ol wokman/meri blong hausik
(h) ol lei manmeri (masta)
(i) ol extensen opisa
(j) ol opisa blong provinsel gavaman

Ol Wok: (ii) Kampani

1. Bungim ologeta kaen pepa husat i toktok long dispela gol mine progek
2. Painim aut wonem kaen wok halivim kampani i wokim pinis long halivim ol asples manmeri nau na long bihaen taem
3. Kisim tingting blong kampani long lukluk blong ol long wonem ol gutpela samting bai dispela developmen i givim o kamapim long wokim sindaun blong ol asples manmeri i gutpela
4. Kisim tingting blong kampani long lukluk blong ol long wonem ol nogut samting bai kamap insaet long sindaun blong ol manmeri taem dispela developmen i stat
5. Painim aut ikwiti sea blong kampani, asples manmeri, na gavaman
6. Painim aut hamas tru kampani i wok long putim blong sapotim ol asples manmeri long ol kaen wok kamap olsem edukesen, treining, na ol narapela gutpela program

7(a) Painim aut interes blong kampani long halivim wok-kamap na ol program blong ol meri
(b) Painim aut sapos kampani i alawim o opim iau long tingting na maus blong ol meri husat i autim long dispela mining progek
(c) Painim aut sapos kampani i givim nambawan lukluk long traem kisim ol meri long wok, treining, na ol narapela program insaet long mining progek
(d) Painim aut sapos kampani i givim nambawan lukluk long pasin blong harim maus blong ol meri, na tu long ol i givim ol meri long seim lukluk olsem ol i givim ol man long ples blong wokmoni, treining na ol narapela samting

8. Painim aut sapos kampani i ruruim ol kaen pasin kastam blong ples
9. Painim aut husat ol asples manmeri i toktok wantaem gavaman na kampani long kamap blong dispela progek
10. Painim aut hau kampani i wokim gutpela pasin blong askim wantaem ol asples

Ol Halivim Blong Mekim Gupela Askim

Asples manmeri long Lihir

1(a) Wonem tingting blong yu long dispela gol mine projek?
(b) Yu hamamas long en? sapos yes o nogat, blong wonem?
2. Yu papa blong graun tu? sapos yes, ol i toktok gut wantaem yu o nogat?
3. Wonem kaen ol hevi yu ting bai kamap long taem blong dispela mine?

4(a) [long ol meri] ol man i save askim long tingting blong yupela tu long ol toktok na ol samting i kamap long graun o nogat? sapos yes, yu hamamas? sapos nogat, blong wonem?
(b) [long ol man] yupela i save askim gut ol meri long tingting blong ol sapos wanpela kaen wok-kamap i laik kamap long graun o nogat? sapos nogat, blong wonem?

5. Nau yupela i stap insaet long sampela kaen program (wokmoni, treining) kampani i wokim o nogat? sapos yes, yu hamamas long en o nogat?
6. Yu ting yu o ol pikinini blong yu bai kisim ol gutpela samting long dispela progek o nogat?
7. Wonem ol gutpela na nogut samting yu ken lukim long dispela progek?

8(a) Yu ting olgeta meri i hamamas long halivim long ol kaen developmen progek long ples?
(b) Wonem kaen ol bikpela hevi i save pasim ol meri long givim tingting na halivim?
(c) Wonem gutpela rot blong bihainim long rausim dispela ol hevi na wokim ol meri i hamamas

tasol long wok bung wantaem ol man?

(d) Wonem kaen ol gutpela samting bai ol meri i kisim sapos ol i wok bung wantaem long developmen blong ples?

9. Yu ting ol meri blong ples bai igat strong long sanap wantaem ol man long wok-developmen? sapos yes, olsem wonem? sapos nogat, blong wonem?

Ologeta: Kampani na Arasaet Manmeri

1. Wonem ol bikpela progek kampany i wokim pinis long halivim ol asples manmeri

2(a) Ol meri i stap insaet long dispela developmen olsem wonem?

(b) Wonem ol samting bai i ken kamap long sindaun blong ol meri husat yumi ken makim wantaem ol man

(c) Dispela developmen progek i wokim ol kaen pasin blong wok blong man na meri i kamap moa gutpela o nogut?

(d) Kampani i wokim pinis plen long lukluk na halivim krai blong ol meri o nogat?

(e) Yu ting ol meri long Lihir i filim olsem ol i stap insaet long dispela developmen o nogat?

(f) Yu ting ol i filim hevi o hamamas long wok blong ol?

(g) Yu ting ol meri i gat bikpela maus insaet long negosiasen na disisen blong kamap blong dispela progek?

3. Wonem ol gutpela halivim ol manmeri husat i wok wantaem dispela developmen i kisim?

4. Yu ting i tru olsem olgeta manmeri blong Lihir igat bikpela pawa na maus insaet long dispela mining developmen?

5. Wonem kaen samting o tingting i wok long kamap nau long ol manmeri husat i wokmoni na husat ino wokmoni insaet long kampani?

6(a) Wonem ol bikpela interes blong ol meri?.....kampani i lukluk long en tu o nogat?

(b) Yu ting kampani i mas wokim moa long halivim ol asples meri o nogat?

Ol Gutpela Poen blong Tingim taem Yu mekim Askim

* Raitim ol gut ol poen ologeta naet taem
* Ruruim gut ol pasin blong ples
* Ruruim tingting blong wanwan manmeri
* Bungim ol meri long bikpela grup tasol na noken wanwan
* Noken bihainim politik pasin blong ples
* Mas gutpela long ologeta manmeri
* Mas gat planti buai long givim ol manmeri husat i toktok wantaem yu

APPENDIX TWO: CUSTOMARY LEADERS LISTED BY NDA AND LMALA

WARD 1 (LMALA)

Londolovit village:	Eremas Atzier and Ben Sangal
Kapit village:	Isaiah Zikmet and S. Sapile

WARD 2 (LMALA)

Putput # 1 village	John Pae and Paul Pilai
Putput # 2 village	Linus Zikinbel and Frederick Kalaru

WARD 3 (NDA)

Lipuko village	Paulus Wol
Matakues village	John Wasier
Kanan village	Raphael Pawai

WARD 4 (NDA)

Kinami village	Anton Luget
Lataul village	Vincent Sipi
Lesel village	Benjamin Brukam

WARD 5 (NDA)

Tumbuapil village	Joseph Kondiak
Komat village	Ludwig Bolbol

WARD 6 (NDA)

Pangoh village	Alois Konkon

WARD 7 (NDA)

Talies village	August Karelium
Hurtol village	Michael Talaye

WARD 8 (NDA)

Sianios village	Sikial Silabu
Samo # 1 village	Josua Namba
Samo # 2 village	Gabriel Anap

WARD 9 (NDA)

Mazuz village:	August Tohierau

WARD 10 (NDA)

Kosmaiun village:	Nathaniel Sasbiah
Lienbil village:	Sebastian Tohielaz

WARD 11 (LMALA)

Zuen village:	Gideon Penges and Eliuda Lukon
Kunaie village:	Linus Yembek and Paul Kalailio

WARD 12 (NDA)

Malie village:	John Yaspot

WARD 13 (NDA)

Matatokuen village:	Joseph Pokzie
Malal village:	Michael Solgas

WARD 14 (NDA)

Ton village:	Henry Simbung
Mosoi village:	Francis Sorong

WARD 15

Mahur island:	Peter Kerker