Social and Environmental Impact Assessment for the Murum Hydroelectric Power Project

Contemporary Ethnography
EXECUTIVE SUMMARY

Background to the Contemporary Ethnography

The Sarawak Government commissioned this study as part of the Social and Environmental Impact Assessment for the Murum Hydroelectric Power project (HEP) to gather information about the situation on the ground concerning the affected people. The information gathered provides important baseline information for the resettlement planning process and describes in detail the Penan current way of life, their population, culture, economy, priorities and their views and perceptions toward resettlement.

The Contemporary Ethnography is the first step in achieving ‘international standards’ for the resettlement of those Penan communities affected by the Murum HEP.

The contemporary ethnography provides a deeper level of understanding about the scope and nature of social changes experienced by Penan, together with an informed assessment of the likely trajectory of future change will be of crucial importance in the design of successful and sustainable resettlement. This information is also vital to enable detailed planning and to ensure the long-term success of resettlement.

The study has employed methodologies that meet international standards and are locally appropriate and acceptable. Information for the Contemporary Ethnography was derived from consultation and, in turn, will be used in a consultative process to elaborate potential options in relation to resettlement and to prepare a Resettlement Action Plan (RAP).

Penan history and cultural heritage

The Penan of the Seping, Plieran and Danum River valleys have a population of just over one thousand five hundred and thirty people, living in eight villages and have been resident along these river valleys for generations. Through their genealogical knowledge they can trace an 11-generation continuity between many young people of Long Wat today and their apical ancestor Teguli Pengisan; a reach of at least 200 years.

Also known as the Western Penan, they have generally kept away from other ethnic groups and with access to abundant, fertile land were able to thrive in this most remote part of the Belaga District. As early as the 1960s, they began to adopt a more settled lifestyle being introduced to swidden agriculture by the Kayan who stayed with them. Up to the 1980s the Penan adaptation to settled life was at a slow pace that allowed them to use their traditional activities as back-up to their agriculture activities.

The landscape surrounding the Penan is very important as everything in the landscape connects the people to their past. Accordingly, their heritage encompasses everything from habitation sites to water features to the landscape and the environment. The Penan history is remembered through the landscape and as such their place in the world is defined by their detailed knowledge of their surroundings. Many of the physical features have special significance embodying the history, religion and cultural values of the communities.

Along the Plieran and Danum rivers there are a number of important sites. These sites are generally linked with migration routes and provide the Penan with the visible markers in their territory. The cultural sites have stories related to the origins of the site and provide the Penan a connection to the spiritual world. Batu Tungan, located at the present site of the Murum hydroelectric dam, is one of the sites that all the communities claim. This important site requires the appropriate rituals of appeasement to ensure balance in the spiritual world.

Over generations, the Penan have shaped their landscape, harvesting and improving
its productivity through their sustainable resource management practices. The clearest example of this is the Western Penan concept of molong; a method of resource stewardship that provides a complex system of ownership and management of forest resources which now includes cultivated land.

With the arrival of the logging companies there has been a corresponding decline in the richness and ability of the forest landscape to support the Penan lifestyle. The environment is still an important source of sustenance but its productivity has declined. The Penan now need to spend time planting crops for both subsistence and commerce, seeking the means to earn money to buy food.

The community

All the communities have strong ties with each other and are generally characterised by a strong institution of leadership. This cohesiveness has helped them to survive by cooperation and sharing and has enabled them to organize themselves for agricultural tasks.

The Murum Penan live in separate communities of 60 to 200 members traditionally built adjacent to rivers and streams. The main dwelling is a longhouse structure with many also accessible by roads extended from the extensive network of logging tracks in the area. Many families also still make use of farmhouses or sago camps located at a distance from the main longhouse when tending crops or gathering and processing sago flour.

Most of the longhouses have gravity-fed water supply systems but only three have gravity-fed pipe water for each apartment. All longhouses have squat-type toilets with manual pour flushing, but not all apartments have individual toilets with most being shared by three or four households. With the exception of Long Malim and Long Jek, all the longhouses have generators to supply electricity for lighting and other electrical appliances including television sets. The fuel to run the generators is requested from nearby timber camps.

The closest centre providing government, education and health services is the Sungai Asap Settlement area established for communities affected by the Bakun HEP. Access to the services at Asap for the Murum Penan requires a full day trip from their longhouses by hitching lifts from vehicles owned by the timber camps located along the route.

As the cost of living becomes a greater concern, there is an increasing demand for employment. All the communities are becoming more monetised as it becomes more difficult to survive on the remaining natural resources. A consequence of the more settled lifestyle is that communities have grown in size. Overcrowding has become a concern, especially for the older generations who are more used to larger spaces and less people. Nonetheless, the Penan still consider the following values of community life and location as important:

- Living and working together;
- Helping one another;
- Living near the river.

The aspects considered most important to improve longhouse living are:

- To have an area of forest where they can collect forest products;
- Having sufficient suitable land for farming; and
- The area is of their choice (i.e. they are familiar with the area).

The Penan wish to have access to the services other communities have, but are also wary of the negative aspects of urban life. For this reason, they wish to maintain some control over the culture of their communities and keeping their communities independent [of other communities] is how they believe this can be achieved. The
Penan desire for their children to be educated and want to have a better economic future, but they also wish to retain their identify as expressed through their communities and their way of living.

The Penan Households

The main production and consumption unit, approximating an industrial notion of nuclear family, is referred to as a lamin. This is the Penan household and generally consists of a couple, children of varying ages, and perhaps a widowed parent.

As households reach an optimum size, it becomes difficult to live together, let alone to find enough food for all and this is when the lamin breaks off and moves into a new apartment. Today, most of the communities consist of several (anywhere from one to seven) lamin living in one apartment. This situation is not one of choice but rather one borne out of the ambient economic situation. This overcrowding is most acute at the older longhouses.

The Penan have been resident in the Murum area for some time and their numbers have been steadily growing. They are a young population with the working or productive population of the community (ages of 20 and 60) corresponding to 42% of the total population and only 4% of the population older than 60 years.

There are sufficient numbers of students in the various communities to create two full schools, one for the Plieran population and another for the Danum.

A reasonably large proportion (60%) have birth certificates, but the majority of the community (over 80%) are still without identity cards. While they are reasonably mobile and visit other local communities, many have never been beyond Bintulu. The families and communities are stable with the majority of the dwellers resident in their respective communities all year round. The exception is Long Wat, which has a sizable population in Sungai Asap looking after their schooling children.

Community Territory

The basis for historical claims to land is ancestry and genealogy is intimately related to a group’s migration and habitation histories. This territory is made up of previous settlement sites and burial grounds as well as a network of trails connecting burial sites, old camp sites, areas with resources such as sago groves, rattan stands honey trees and other products important to the Penan. Each community recognises its own general territory and that of the other communities.

Penan communities move freely through each other’s territory and (with permission) use the resources so long as the resources are plentiful and historical relations between the groups are friendly. With outside groups, the rules of use are more formal and outsiders are expected to not move into a place and extract resources without permission from the residents.

Collectively, the Penan regard the Murum catchment as their home and have lived in this area for generations. In spite of having had many habitation sites, the locations of the present villages are within a 12 km radius from where they were over 60 years ago.

The Penan Economy

The Penan have been in transition from their former hunter-gatherer existence to a more agriculture-based economy for close to 40 years. The transition has been slow as (until recently) the forest has been able to provide not only food, but also products that could be sold for cash. Over the past 15 years, the forest resources have diminished and the Penan are now increasingly looking for other economic opportunities in addition to farming.

Even though having only settled in longhouse living for a relatively short time, the Murum Penan own considerable durable assets. The longhouse structure is arguably the main asset for the community and by extension for the individual households.
living in the community. Other assets include boats, outboard motors, televisions, radios and mobile telephones. Their interest in acquiring these assets is a factor influencing them towards a more cash-based economy and as a result more Penan are seeking employment.

However, levels of employment are still low with only about 30% of households reporting some form of income. Current income is derived through a few men employed by timber companies, income from allowances paid by the companies and the rest is from selling fruit, forest products or handicraft items. Sharing is still the norm in the community and assistance is given to all who need. Thus, incomes at the community level are low with the average cash income per household only RM 150 per month. This is significantly lower than the rural poverty line index of RM 810 per household per month. Survival therefore very much depends on access to forest products with the replacement value of these products estimated at just over RM 700 per month per household.

Household expenditures are mainly on staple items such as rice, sugar and flour. Other expenditures include soap, household items, tobacco and alcohol as well as clothing, transport and school fees.

The Penan are still relatively new to farming and have not reached self-sufficiency in agriculture production. Farm plots tend to be small and dedicated mainly to rice and tapioca crops. The production is low, subject to destruction by pests and the rice generally only lasts four months. Tapioca roots provide another four months of food and the balance of the year is bridged through purchases (of rice or flour) or through gathering. There is currently no cash crop farming of crops such as rubber, cocoa, or pepper. Fruit trees are mainly for their own consumption unless produce (such as durian and rambutan) can be transported to the markets for sale. They have received little assistance for agriculture extension or support.

In spite of the diminishing resources, the forest remains as the main source of food and products for the Penan. The forest is still viewed as a “safety net” essential to survival. Hunting is still a very important activity to provide protein for the community, as is the collection of a wide variety of other products. The replacement value of products derived from the forest comprises approximately 75% of household “income”.

The Future

Creation of employment opportunities for the Penan will be an important aspect for their future survival. There is a realisation that employment is required to make the transition to the cash economy and that the developments surrounding them present some opportunities.

As much as there is recognition of the need for employment, most of those interviewed still maintain that an essential element of satisfactory living is having sufficient land for cultivation of rice and planting of fruit trees and other cash crops. Sense of place in their landscape is very important. Having access to forest for hunting, fishing and gathering forest produce is also an important facet in what is viewed as a satisfactory living.

A very important aspect of what is viewed as satisfactory living is ensuing a future for their children. In this the Penan desire for the children to be successful in school and to be able to further their education. They acknowledge that education provides access to opportunities for jobs, and jobs provide the money for their sustenance.

The sense of community is very strong among the Penan and belonging to this community carries with it the obligation to share and look out for one another. They value these aspects of community life and do not wish to lose these in the future.

Health
The major health concerns for the Penan are the need for safe water, waste management including latrines and protection against communicable diseases such as Malaria, Tuberculosis and Measles.

Having sufficient food is a continual problem and there are times in the year when there are food shortages. Based on weight for age, 12% of children below 5 years of age were found to be severely malnourished and 31% were moderately malnourished. By comparison, the overall rate of malnutrition for Sarawak in 2009 was 1.4% for severely malnourished and 9.9% for moderately malnourished.

The nearest clinic for all the longhouses in the Murum area is located in Sungai Asap. Even though as a government clinic the service is free, the distance, time involved and costs to reach the clinic presents a major problem for the Penan.

Education

In spite of their sizeable population of over one thousand five hundred people, the remoteness of these communities has prevented any schools from being established. Undeterred, many of the inhabitants of the areas have shown a great hunger to learn and a desire to go to school. However, the distance to the schools, the cost of transport and the lack of support for the Penan children have prevented many from attending school. The number of children who were actually in school in 2009 was just 33 Penan (2% of the total population). These 33 students are children of the people from Long Wat who went to live in Asap to be close to their children in school. Only two other Penan children (one from Long Malim and one from Long Singu) were in school.

The number of children that should be in school, or the number for which facilities are needed totals 593. This does not include the 102 children of kindergarten age.

The Penan see education as important to their children’s future. There are some challenges to be overcome in terms of not just the location of the schools but also the format of the curriculum and the support for these students.

Conclusion

The generally assumed traditional Penan lifestyle of isolated jungle nomads is no longer true for the Murum Penan and has not been for many years. They live in communities that have settled since the 1960s and in longhouses now accessed by a network of logging and estate roads. They are connected to the outside world by roads, radios, parabola TVs, and mobile phones and through interactions with other ethnic communities (and foreigners) who work in the logging and estate camps, factories and the Murum dam site.

As the access to the forest becomes more difficult for the Penan and they are increasingly unable to gather sufficient resources, they come to depend more on store-bought items to meet even their most basic needs. Thus employment and cash incomes are becoming more important in the Penan survival strategy.

For the Murum Penan, food security is still the most important aspect of life. The forest still plays an important role and an important aspect of Penan life is the proximity of the forest and the availability of the jungle products they depend on for their daily needs.

The community is another important aspect of their life and the sharing that is implicit in this lifestyle. Sharing food and other items and assisting each other in times of need is important to the Penan and an aspect of their lifestyle they do not wish to lose.

The communities affected by the Murum Hydroelectric dam understand the implications of this project on their lifestyle and have highlighted their concerns. They have also indicated their preferred locations for resettlement based on areas familiar to them and areas where they feel they will be able to live. Some of the concerns...
Frankly having made our point I would prefer we just exercise our right to franchise and be done with the silly ninnies.

- Knowing exactly the extent of the flooded zone;
- Having access to suitable land and forest areas;
- Knowing the long-term movement of the timber companies and plantations; and
- Knowing what areas can be made available for Penan resettlement sites.
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1 BACKGROUND TO THE CONTEMPORARY ETHNOGRAPHY

The Contemporary Ethnography is the first step in achieving ‘international standards’ for the resettlement of those Penan communities affected by the Murum Hydroelectric Power project. The study was commissioned by the Sarawak Government as part of the Social and Environmental Impact Assessment to gather information about the situation on the ground concerning the affected people. The study was conducted through field research over a six-month period between October 2009 and March 2010 and the information gathered provides important baseline information for the resettlement planning process. Described in detail is the Penan current way of life, their population, culture, economy, priorities and their views and perceptions toward resettlement.

The study provides a description of the Murum Penan livelihood preferences and the nature of the habitat required to support such preferences. The study also provides a deeper level of understanding about the general economic situation and state of wellbeing among the Penan and the extent to which their life is impacted by a changing environment (including changes in forest cover, an increasing need for money, a burgeoning demand for health and education, and the growing number of relationships with the outside world).

In addition to the scope and nature of social changes experienced by Penan, the study provides an informed assessment of the likely trajectory of future change will be of crucial importance in the design of successful and sustainable resettlement. This information is vital to enable detailed planning and to ensure the long-term success of resettlement.

One of the important outputs from the contemporary ethnography was a Household Register of longhouse occupants. In addition to identifying all eligible households for resettlement planning purposes, the register also identifies vulnerable groups and describes current and preferred schooling, health and other essential service delivery systems.

The aim of resettlement planning is to ensure that the resettled Penan communities affected by the Murum Dam are provided with livelihoods and life qualities comparable to or better than their original situation. With this objective in mind, the study has employed methodologies that meet international standards and are locally appropriate and acceptable.

The information for the Contemporary Ethnography was derived from consultation and will be used in a consultative process to elaborate potential options in relation to resettlement and in the preparation of a Resettlement Action Plan (RAP) that details the preferred resettlement outcome agreed between the Government and the Penan. These options relate to more than just geographical relocation and will cover the following categories:

- Infrastructure options - including roads, housing, clinics, schools, electricity, communications, water, sewerage and waste systems as well as preferred options for community centres, agricultural land and forest areas.
- Livelihood restoration options - for the restoration or improvement of current livelihoods as well as poverty alleviation.
- Compensation options - to address losses for certain heritage sites, property, incomes and productivity over a suitable period after resettlement.
2 PENAN HISTORY IN THE MURUM CATCHMENT

2.1 The Penan in the Danum and Plieran River Valleys

According to current District Office records, there are just over 13,000 Penan in the whole of Sarawak (Langub, 2008). Using the Baram River as the rough dividing line, the population has been divided into the Western and Eastern Penan with the Penan of the Danum and Plieran Rivers belong to the Western Penan group (Needham, 1972). While the two groups recognise each other as one people, there are differences in terms of dialect, social organization, environmental adaptation, and some other key socio-cultural features (Brosius, 1988).

The Western Penan have been reasonably well documented, especially through the work of their principal ethnographers Rodney Needham (1954a; 1954b; 1954c; 1954d; 1965; 1971) and Peter Brosius (1986; 1991; 1992; 1995; 1997). From the colonial period onwards, various civil servants have also written about them. During the colonial period, these included Tom Harrison (1949) and Ian Urquhart (1951). More recently, Jayl Langub has since 1972 provided a number of reports on general aspects of Penan life as well as on ecological adaptations and development (Langub 1972a; 1972b; 1974; 1989; 2004), and he is today recognised as the major Malaysian scholar working on Penan materials. There is also a set of reports on the Western Penan provided by Guy Arnold (especially 1958; 1959), a member of the 1955 Oxford University Expedition to Borneo. Arnold’s 1958 report is especially valuable in establishing the location of the communities he visited as well as the names of the people there. The report provides external verification to the Penan’s claims to residence including a record of their numbers. Of the people included in his census in 1955, a third are still alive.

The Penan of the Belaga District have been in the Danum and Plieran river valleys since at least the 19th century (Brosius 1992) and began to adopt a more settled lifestyle in the early 1960s (Langub, 1996). Occupying the most remote parts of the Belaga District, they were away from other ethnic groups with abundant, fertile land providing ample opportunities for game and survival. As they began to settle they were introduced to swidden agriculture by longhouse peoples, such as the Kayan who stayed with them and provided advice on building houses (Langub, 1974). Up until the 1980s Penan adaptation to settled life was gradual, but at a pace that allowed them to combine their traditional livelihoods and newly adopted agriculture activities as needed.

2.2 History

Apart from the Penan, many Native groups have settled in the Ulu Belaga region in the past. According to Khoo (Chang and Khoo 1993), the Badeng and Sebop were the most recent non-Penan occupants of the area. While these other groups have fled or moved out of the area (over the course of such events as the Brooke Administration’s punitive raids of 1896), the Penan have stayed. Furthermore, they recognize that they originate from this region. Both Penan and non-Penan alike acknowledge their long-term presence in the area and the evidence of their history is held in the placenames, landforms, burial grounds, and the sites where important events occurred. The six dam-affected communities recognize direct descent from the original Penan who lived, travelled, and worked throughout the Danum, Plieran, and Seping watersheds, and they have close ties to the Seping communities of Long Jek and Long Peran, who share a similar descent. The following summarizes known history, drawn from field interviews and Brosius (1992).

Penan have an impressive depth of genealogical knowledge. Through these genealogies, we find an impressive 11-generation continuity between many young people in Murum today and their apical ancestor Teguli Pengisan, a reach of at least 200 years. Teguli’s sons are significant in linking Penan genealogies. One son, Poven, is the ancestor of contemporary Penan Geng; another, Buang, is the ancestor...
of the Penan Apau and Penan Silat; a third, Padan, is the ancestor of the Penan Apat. Genealogical continuity is shown in Figure 21, which traces the ancestral lines of a representative child from Long Singu. As the diagram shows, three of her ancestral lines can be traced back to Teguli Pengisan, while others link her both to other Penan communities and longhouse-based ancestors.

Figure 21 The descent of Repi Ngang, a child of Long Singu showing multiple lines of descent from the apical ancestor Teguli Pengisan.

All the communities comprise an admixture of different sub-groups, and vaguely recognize they are part of the Penan Geng network. The sub-groups are no longer meaningful social divisions but the labels are still used for self-identification purposes, rather like mnemonics to indicate one’s ancestral routes. Because groups are named for place (e.g., Apat = Apat River on the Seping; Apau = upper Danum; Geng = Geng River on the Seping), the name itself can be significant in claims to particular lines of ancestry and therefore of belonging to particular territorial domains.

A gross summary of the history begins with the Penan Apat, who lived on the Apat River and various Plieran tributaries around Long Luar prior to the 20th century. In 1900, as a result of the punitive Iban expedition of 1896¹, Penan groups were geographically divided. One sub-group remained on the Plieran, another fled to the Tinjar, and a third to the Geng River in the Seping, where they teamed up with the now-extinct Penan Keluan, and became the Penan Geng. This last group then lived

¹ The Iban were sent by the Brooke Administration.
in the areas of Jek and Tegulang Rivers for about ten years, before returning to the Plieran, Luar, and Seping Rivers. Various group fissions later occurred, leading to the founding of the modern communities of Long Jek, Long Peran, Long Tangau, Long Luar, and Long Wat. The related group Penan Benalui went from the Benalui (on the Balui) to the Linau, and thence to ulu Danum (c. 1850s). At that time, they seem to have split into three groups, Penan Lusong, Penan Bunut, and Penan Apau, and their descendants can be found in the Murum communities today. Penan Apau, for example, are the founders of Long Malim while Penan Bunut (which no longer exists as a distinct group) joined up with (among others) Long Wat. Yet another Penan Benalui group left the ulu Danum around 1895 and migrated to what is now East Kalimantan together with their Kenyah Badeng patrons (Puri 1997). In more recent years, these ties have been consolidated with further instances of intermarriage across river valleys. For example, ties between Long Malim and Long Wat are notably close, due to shared descent from the Penan Apau, while there seems to be a continuous pattern of marriages linking Long Tangau and Long Wat.

Since the end of the Second World War, the six Penan communities of the Plieran and Danum rivers have remained roughly in the areas where we find them today. They have moved locations a number of times, but always within the Danum, Plieran, and Murum watersheds. Two new communities emerged in the 1990s, when the Long Singu group split off from Long Tangau (c. 1994) and the Long Menapa group split off from Long Luar (1996).

2.3 Heritage

“Heritage” in the Penan sense has a broad reference that is not just limited to monumental landscapes and distinctive rock sites. Rather, it is everything in the landscape that connects people to their past (Brosius, 1986). Thus, in the Penan context, heritage encompasses habitation sites, water features and the landscape and environment.

The most visible “heritage markers” (and the most distinctive landforms) in the dam-affected area are the rock outcrops of Batu Tungun, Batu Suleng, and Batu Tao, which jut above the ridges surrounding the Murum Dam wall (Figure 22). Batu Tungun and Batu Tau are iconic features of the Penan landscape, and their symbolic values are shared among all Penan communities in the Danum and Plieran watersheds. Also significant is Batu Pebin, a set of rock formations in the river, some 5 km from Long Wat. These landforms traditionally were places of avoidance as the Penan believe the areas to be sacred, the abodes of spirits. They believed that they were not to misbehave in the vicinity of the sites and that any disturbance without the permission of the spirits would lead to supernatural punishment. It is for this reason that siting the dam at the foot of Batu Tungun, without a prior ritual intervention, has caused the Penan so much distress. Damage to the hills of the entire complex as a result of the construction of the dam wall, tunnel, and associated earthworks is already considerable. Once the dam is complete and the water impounded, Batu Pebin will be submerged by the dam. The top of Batu Tungun will rise above the water, which will reach to the base of Batu Suleng.
Figure 22 Batu Tungan.

**Habitation sites** - These sites are located within or near to the migration and travel routes of Penan past and present. Sites are generally located along the banks of rivers and tributaries, with older sites located much farther upland. The wider environment of habitation sites includes specific botanical features that have been *molong*\(^2\) by Penan and their ancestors. The sites include:

- Long-established foraging / collecting camps (*Penan lamin tanah*);
- Former *lamin jau* (base camps); and
- Former longhouse sites.

**Water features:** Rivers are very important to the Western Penan and this includes all the associated water features (rapids, pools, waterfalls, still water pools, springs, etc). These features are central to the evolution and development of Penan history and there is detailed knowledge of all the water features and rivers in the Penan landscape. Although many of these water features will be inundated by the reservoir created by the dam, the knowledge and memories will persist for some time.

**History in the landscape:** The Penan history is remembered in the landscape and as such their place in the world is defined by their detailed knowledge of their surroundings. Much of the knowledge of the surroundings is linked in memory to past events that provide the Penan with a living history record. Much of this will be obliterated by the impoundment of the dam and it will not be possible to salvage many of the physical markers. As such it will be very difficult for the Penan history to be preserved, as it will only be held in the memories of the people, without links to physical features in the landscape. The only means to preserve this history is for those memories can be documented and objectified via maps, charts, place markers, and film. An example, of this codification is shown in Figure 23. The full caption of this illustration is “Footprints of a Penan headman Salu’ Nyibe in the interior of Belaga District as narrated to Jayl Langub sometime in 1986 at LongLuar.” The diagram shows (among much else) the Plieran-Murum-Danum watersheds—much of

\(^{2}\) Plants that have been harvested, but in a way to conserve the stock for future use (See Section 1.4).
the dam-affected area—from the perspective of a Penan migration history. Penan have become adept artists of diagrams and sketches and the older members of the community can elicit such memories comprehensively.

Figure 23. Sketch map of the footprints of Salu' Nyibe demonstrating the detailed knowledge of the Danum and Plieran water catchments.

Penan cultural heritage does not differ from the international and regional definitions in that it includes tangible property and sites having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values, as well as certain natural environmental features that embody the history, religion and cultural values of affected communities. By these criteria, Batu Tungun, Batu Suleng, Batu Tau, and the broader Long Saoh area up to Batu Pebin qualify on all counts as a Penan cultural heritage sites.

2.4 Environmental resources and changes in the Penan world

About 40 or so years ago, all the dam-affected communities began to develop permanent settlements. Long Wat was one of the first communities to readily take to agricultural life (after an initial period of slow adjustment). Since the Penan's previous settlement system was not that different from the present setup, they did not have to make a radical shift from their traditional hunting-and-gathering lifestyle to agriculture. As Brosius summarized, their communities were always large (up to 200 persons) and they maintained central base camps that were inhabited for up to a year. Furthermore, they had a strong institution of leadership that enabled them to organize for agricultural tasks when the latter became part of their everyday life (Brosius 1987, 1992).

An important point to note is that for some time the Penan have walked a fine balance between hunting and gathering (going out to collect resources "in the wild") and agriculture (bringing resources back to the community through managed and tended field-cultivation). Over generations, they have made the landscape their own by altering and transforming it, modifying it and improving its productivity through

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3 Sarawak Cultural Heritage Ordinance 1993
their resource management practices. The clearest example of this is the Western Penan concept of *molong* which has been much reported (Brosius 1986; Langub 1993; Puri 2005). *Molong* is generally seen as an integral element of the Western Penan land management system, both here and in Kalimantan. *Molong* means: 1) to lay a claim to a particular resource, and 2) to foster the resource for future use. This is also a means to create private property (i.e. to *molong* a resource -like sago groves and rattan stands- is to establish ownership of the resource). Harvesting rights can be given to other members of the group, and the resources can be inherited by future generations. When a Penan *molong* a resource, he/she monitors it and manages it for sustained use, and has the option of passing it on as a legacy. Any Penan may do this; a young man in his late 20's may say he has *molong* between 25-30 plants, i.e. on average one per year of his life. All non-fugitive resources, i.e., those that do not move or migrate, can be *molong* or claimed by individuals, monitored by them, managed for sustained yield harvesting, and given as an inheritable good. This method of stewardship has thrived among the Penan and provided a complex system of ownership and management of forest resources and now includes cultivated land.

For the dam affected communities there is an extensive spread of individually owned and managed orchards, trees, sago groves, rattan stands, and cultivated fields throughout the course of the Danum and Plieran Rivers from the longhouse to the dam site (and inland on some of the major tributaries), along with communal forest reserves in the background on the edges of the territory. Every household has a range of resources that it can use: orchards and fields cultivated with rice, fruits, and/or vegetables; rattan stands and sago groves available for harvest at any time; shared spaces for transit, fishing, hunting, and collecting wild vegetables, rattans, medicinal plants, useful timbers, and other everyday resources. This pattern is similar for all the communities along the Danum and Plieran rivers.

In the original, pre-timber concession state (i.e. prior to the 1990s), this would have been a very rich landscape. However, with the arrival of the logging companies there has been a corresponding decline in the richness and ability of the forest landscape to support the Penan lifestyle. The communities generally attribute the decline in environmental quality to the arrival of the timber concessions. It was then that the rivers became polluted: they say fish life dropped when the timber operations began working in the area. Game, especially the migratory wild pig, the traditional mainstay of Penan subsistence, has also depleted. Hunting with guns and blowpipes is still done, but requires more effort, with game being found further and further upriver. Basically, they can still do what they have always done, but the yields per effort (especially measured in time) have plummeted sharply. The environment is still an important source of sustenance, rather like a storage locker that can be opened at will, but its productivity has declined. To make up for this deficit the Penan now need to spend more time planting crops for both subsistence and sale and seeking means to earn money to buy food.

### 2.5 Cultural markers and archaeology of the communities

Burial sites provide evidence of history and a record of presence. In the case of the Penan, their burial sites and archaeological features are generally linked to the landscape and the environment, providing a living record of the history of the Penan. The communities were surveyed to determine the numbers and locations of the burial sites. Long Jek and Long Peran have been included in the survey. Even though they will not be affected by the dam project, they do not wish to have their heritage further altered.
2.5.1 Long Menapa, Long Jek and Long Peran

Long Menapa, Long Jek and Long Peran were surveyed together and identified sites including: (i) four burial sites known as Ujan Ngeyuyit, Apat Palan, Sungai Sungan and kelireng Sungai Menawan in Long Menapa, (ii) two burial sites known as Bok Magai and Long Uten in Long Jek, and (iii) two burial sites known as Lubuk Ja and Long Peran in Long Peran. Based on GPS readings, all these burial sites will be flooded by the dam. These three communities have identified close to 3,000 gravesites, which will be inundated as a result of the dam construction. Only one grave at Long Peran, is to be exhumed and relocated to the new settlement area (Figure 25).

The presence of kelireng in Sungai Menawan near Long Menapa suggests that other ethnic groups have previously settled in the same area (Figure 24). According to an earlier archaeological investigation done by Harrisson and Leach (1954), the burial site with kelireng (burial pole) in the Menawan area probably belonged to the Sebop, a sub-group of the Kenyah. The Penan at Long Menapa have also claimed ownership of this burial site and such claim needs to be verified.

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4 Sungai (Bahasa Malaysia) = River

5 Burial poles carved out of tree trunks.
The Penan at Long Menapa also reported 10 sacred rock sites around Long Menapa. These include; Batu Ja Long Kelayan, Batu Mepipe, Batu Keng Le Sian, Batu Bile Sahat, Batu Burak, Batu Limau, Batu Kedawing, Padang Arimau, Agong Pusaka Date Rupe and Agong Pusaka Bo Ani.

According to some Western Penan traditions, Batu’ Burak is their place of origin. The mythical status of Batu Keng Le Sian as another origin marker is also acknowledged by a related group; the Penan Benalui of East Kalimantan, who migrated from this area in the mid-19th century (Puri 1997).

The list of claimants from these three communities is included in Appendix One.
Figure 25 Graves and historical sites near Long Jek, Long Peran and Long Menapa.
2.5.2 Long Malim, Long Singu, Long Tangau and Long Luar

In Long Malim there are two longhouses, one belonging to the Penan and the other to the Kenyah Badeng. These communities plus Long Singu, Long Tangau and Long Luar have identified over 6,000 gravesites in the vicinity of their respective communities (Figure 26). The burial sites surveyed included: (i) three burial sites known as Sungai Penganen, Long Malim and Kubur Badeng in Long Malim, (ii) two burial sites known as Lubuk Tudek and Lubuk Kerepik in Long Singu (iii) one burial site known as kelireng Long Tangau in Long Tangau and (iv) two burial sites reported as Kuala Luar and Kuala Long Luar in Long Luar. Based on GPS readings, all these burial sites will be flooded by the dam.

The list of claimants for these communities is outlined in Appendix Two.

The presence of kelireng in some of the burial sites, in particular the kelireng at Long Tangau and Long Luar strongly suggest the past presence of other tribes in the area (Figure 27). Although the people of Long Tangau and Long Luar have claimed ownership of the burial sites with kelireng, earlier archaeological investigations suggest the presence of a the Sebop group (Harrison and Leach, 1954). According to local information, the kelireng were erected sometime in the 1930s.

Based on information obtained from the local Penan, they have more burial or gravesites, but these are located far away and are difficult to locate due to the thick undergrowth. In some cases even the Penan themselves cannot remember or recollect where the graves are now because most of them are shallow graves with no markers.
There are two cultural sites in the form of sacred stones known as Batu Pama or Batu Diam Sai⁶ and Batu Asuk along the Plieran River. Both these two sacred stone sites are located in the Plieran River and form part of the river rock formation. Batu Pama is said to resemble “frogs lining up to cross the river” while Batu Asuk is believed to resemble “dogs lining up to cross the river”. These formations are linked to the folklore of the Penan of the Plieran.

Figure 26 Location of gravesites and settlements near Long Malim.

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⁶ Literally; “Frog Rapids Rock”
2.5.3 Long Wat

Based on the oral records and interviews, the archaeology and cultural heritage of Long Wat provides good data on the burial and cultural sites in Long Wat and the Murum area in general. This also provides an indication on mortality rates over the years, and the causes of deaths among the Penan in the Murum area over the last 40 years or so. The people of Long Wat in Murum and Sungai Asap have identified some 989 graves.

There are basically two types of burials in Long Wat; the earlier type of burial is the shallow grave (2-3 feet deep) and the later type of burial is the wooden/log coffin placed on a tree stump in a shelter decorated with carvings. The shallow graves are typical of the Penan’s traditional way of burying the dead while burials in wood coffins and shelters with carvings appeared to be a recent practice, possibly due to influence from the Kenyah and/or Kayan burial traditions in the area when the Penan became more settled, living in longhouses built by the timber camp (post 1970’s).

Many of the gravesites consist of shallow graves, without markers and are thus difficult to access and identify. According the informants and interviews with the older generation of Penan in Long Wat and other longhouses, traditionally the Penan would bury the dead in a shallow grave, 2-3 feet deep. After burying the dead person, they would move away immediately and abandon the area near the burial site (as described in Brosius, 1992). These burial sites normally do not have any proper or permanent markers and the location was remembered based on the environmental markers (fruit trees, rocks, river junctions, etc.) Today, the Penan in the Murum are
settled and they have adopted the practice of burying the deceased in burial sites located near the longhouse.

The burial sites surveyed are all located along the banks of the Murum River, and are easily accessible by boats from Long Wat. Some of the recent graves in these burial sites can be easily identified because they have names and dates written on the shelters used to cover the wooden coffin. However, most of the shallow graves in the burial sites are very difficult to identify because they have no markers and are covered by thick undergrowth. The informants also reported the presence of graves in the upper reaches of the Murum River and its tributaries but these sites were not surveyed because: (i) the sites are situated very far upriver; (ii) the Penan themselves cannot remember or recollect where the graves are located; and (iii) they are all shallow graves and most are now covered by thick undergrowth and therefore almost impossible to find (Figure 28).

Figure 28 Graves and historical sites in the vicinity of Long Wat.

The main physical cultural sites identified the Long Wat community are along the Danum River. These include sacred rocks named Batu Peben, Batu Tau and Batu Tungun. Of the three sites, the latter two are of particular cultural importance and the people of Long Wat requested that a large-scale miring ceremony be carried out and pemali paid before these sacred stone sites are flooded. (All the communities have made similar requests for their respective cultural sites.) These ceremonies are to be carried out, preferably with Penan from all the affected longhouses, in order to appease the spirits and to prevent bad things from happening to the Penan. The list

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7 Compensation
of claimants and the number of graves claimed for Long Wat are outlined in Appendix Three.
3 THE COMMUNITY

3.1 The Penan community

As noted by Brosius, the Western Penan communities are extremely stable: “Penan bands are not the fluid bands characteristic of other recently documented hunter-gatherers. They are enduring social aggregates which evolve, grow and fission through time” (1992: Chapter 2). Long Wat and Long Jek are the most notable in this regard; as traced through genealogies and residential patterns, these communities have shown remarkable stability over the past few decades. By this is meant that they are well-defined social groupings revolving around core groups of people who have shared ancestral descent (see Chapter 1). These core personnel assume various leadership roles within the communities and strongly influence decision-making on a day-to-day basis, as will be discussed further in Chapter 4. The point is that all eight of the surveyed communities, as with other Western Penan, do not fit the popular image of wandering nomads. They have moved settlement locations a number of times but they have always done so as communities led by core personnel who have grown up and grown old together.

The Penan of the Danum and Plieran rivers typically tend to live in groups of 60 to 200 members and have traditionally built their communities adjacent to rivers and streams. The original settlements were two-tiered with a large, central base camp that could be inhabited for up to a year and dispersed short-duration sago camps (Brosius, 1988). Until recently, Penan settlements exhibited a range of architectural styles, from small multi-household apartment blocks to thatched single-household homes spaced around a common area. From about the late 1980s onwards, Penan began to receive assistance to construct permanent longhouses, first from individual politicians and then from timber companies. Today, all the dam-affected communities apart from Long Malim live in longhouses built by timber companies. Long Malim still prefers small apartment blocks, which they built themselves. All the communities have retained their two-tiered residential pattern, except that the base camps of old have been replaced with a permanent longhouse. Penan today are more likely to refer to themselves by the name of the longhouse location (e.g. as “Long Wat people”) than by the sub-group names described in Chapter 1. Their settlement sites are generally located adjacent to rivers with many also accessible by roads extended from the network of logging tracks in the area. When necessary, Penan also establish field huts or sago camps when they need to harvest or collect resources far from the longhouse. This is most evident during the rice-growing season, when people need to be close to their fields.

3.2 Facilities and services

All the community structures consist of wooden longhouses built on the riverbanks or (as in the case of Long Malim) in close proximity to the river. During the initial construction of their longhouses, the timber companies operating in their areas
provided building materials for the Penan. However, for repair and maintenance the costs for materials have to be borne by the local communities themselves. According to informants from Long Malim and Long Singu, they often salvage materials from abandoned timber camps for such purpose.

Most of the longhouses have gravity-fed water supply systems installed by the Department of Health. Long Wat, Long Tangau, Long Luar, and Long Singu share a one-pipe water stand located outside the main longhouse. During the time of survey, most of Long Malim had to depend on river water, although at one longhouse block there was a pipe-stand but was under repair. Three longhouses – Long Menapa, Long Jek and Long Peran have gravity-fed pipe water for each apartment or bilek.

With the exception of Long Malim all longhouses have squat-type toilets with manual pour flushing. However, only those households who can afford it have individual toilets. At Long Singu and Long Peran, the families of the headmen or Tuah Kamponds have separate toilets for themselves. In all cases, these facilities were provided by the Department of Health.

With the exception of Long Malim and Long Jek, the longhouses have generators to supply electricity for lighting at night. In the case of Long Malim, Long Tangau, Long Luar and Long Singu the generators often run during daytime to operate television sets and DVDs (the television reception is via parabola satellite receivers). The generators are may be purchased from collective longhouse funds but are also donated by individuals, such as by Penghulu Pao Tului. The fuel to run the generators is requested by the Tuah Kamponds from nearby timber camps. Such assistance may be provided on an irregular basis or, as in Long Wat, it may be based on a standing agreement of one drum of fuel per month.

3.2.1 Setting

The general environment is rugged and is drained by the Danum, Plieran, and their various tributaries. These rivers are the most significant location markers for Penan, who possess an encyclopaedic knowledge of the water systems, their key features, and their geographical positions. The Danum-Plieran-Murum watercourse is, indeed, much traversed by Penan past and present, and the stretch of the river from Long Wat to the dam site shows extensive evidence of continuous settlement, foraging, and agriculture. Both the Danum and Plieran rise from the Usun Apau. The Danum empties into the Plieran at Long Danum and the Plieran then becomes the Murum as it passes Long Saoh and approaches Batu Tungun. Mythology has it that the Saoh River was the original end point of the Plieran, and that the landscape was altered by the same cataclysmic collapse that created the Batu Tungun rock complex.

The longhouse communities are in general located far apart from each other, with each community located along a separate river. The exceptions are Long Singu, Long Tangau and Long Luar. The latter two are on the confluence of the Luar and Plieran Rivers, a ten-minute walk from each other. Long Singu is a 20-minute boat ride upriver on the Plieran. Another nearby community Long Menapa (also referred to as Long Pelutan) is located on the Menapa, a tributary of the Plieran.

Logging roads connect the other five Penan longhouses. The main logging roads provide a link to the Sungai Asap settlement as well as to the main service centre of Bintulu. Travel to Bintulu from the nearest Penan longhouse community of Long Peran at the Seping River takes 3 to 4 hours by 4-wheel drive vehicle. (The other community found along the Seping River is Long Jek, located 8 km away from Long Peran.

The most remote longhouse community is Long Malim, on the upper reaches of Danum River. Located five minutes from Long Malim is a Kenyah Badeng village. The other Penan community along the Danum River is Long Wat, located approximately 40 KM downriver of Long Malim (66 KM driving on the logging roads) and 13.7 KM upriver of the proposed dam site.

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8 Long = long, or leng in Penan. It means the confluence of a river.
The closest centre providing government, education and health services is the Sungai Asap Settlement area established for communities affected by the Bakun HEP (Table 31). Access to the services at Asap for the Murum Penan requires a full day trip from their longhouses hitching lifts from vehicles owned by the many timber camps located along the route. At Sungai Asap there is a government sub-district office, a government clinic, schools, market and retailing business shops.

Table 31 Distance between Murum communities and major settlements.

<table>
<thead>
<tr>
<th>Location</th>
<th>Distance (km)</th>
<th>Time (hours/minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sungai Asap Resettlement to SCS</td>
<td>121 km</td>
<td>3 hrs by vehicle</td>
</tr>
<tr>
<td>Sungai Asap to Aloi</td>
<td>38 km</td>
<td>45 min by vehicle</td>
</tr>
<tr>
<td>Sungai Asap to Long Wat</td>
<td>138 km</td>
<td>3 hours 30 min by road</td>
</tr>
<tr>
<td>SCS to Long Malim</td>
<td>86 km</td>
<td>1 hr and 30 min by vehicle</td>
</tr>
<tr>
<td>SCS to Long Singu</td>
<td>7 km</td>
<td>15 min by vehicle</td>
</tr>
<tr>
<td>Long Singu to Long Tana</td>
<td>6 km</td>
<td>20 min by boat</td>
</tr>
<tr>
<td>Long Tana to Long Luar</td>
<td>-</td>
<td>10 min walking</td>
</tr>
<tr>
<td>SCS to Long Menapa</td>
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<td>40 min by vehicle</td>
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<tr>
<td>Aloi to Long Peran</td>
<td>32 km</td>
<td>45 min by vehicle</td>
</tr>
</tbody>
</table>

En route to Sungai Asap at the junction of the Bintulu - Asap - Bakun road and the main feeder road leading to the various timber camps in the Seping, Murum, Danum and Plieran valleys (as well as connecting the Penan longhouses) is Aloi junction (Figure 31). Aloi Junction has a general store for household goods, a restaurant, and an occasional market. This area services the workers of the timber camps as well as the Penan. Some Penan make regular monthly trips to Aloi (after receiving their allowances from the timber camps) to buy supplies and other items such as mobile phones, TV and radios while other Penan may visit there as and when opportunities arise. However, they recognise that the prices at Aloi are higher than at Asap, which in turn is more expensive than Bintulu.
3.3 Longhouse spaces

3.3.1 Private and Public Areas
Generally, the living structures follow a typical longhouse arrangement consisting of connected family apartments and a shared public area or ruai (verandah) which provides the main walkway and gathering area and then access to the individual apartments rooms. The verandah is a public area used for socialising, working, and where the children can play. Each apartment basically consists of:

• A living room;
• Compartments for sleeping;
• A large space towards the back for living, making crafts, a kitchen and an eating area; and
• A washing area or room (both for personal as well as kitchen and laundry), towards the rear of the longhouse.

The design of the present longhouses is such that the individual families generally have a verandah or ‘public’ area in front of their apartments with generally larger areas in front of the headman’s (Tuah Kampong’s - TK) apartment (Figure 32). Normally, the living room inside is where the individual family would gather to meet visitors. As there is generally little furniture in the apartment, the space serves multiple purposes including relaxing and sleeping. In most communities there are many cases where several households share the same apartment. This situation has resulted from the partition of new households, following a common pattern in Borneo. A new lamin (household) is theoretically formed upon marriage. But whether the couple remains in the natal household depends on practical constraints: “Among contemporary Western Penan, households have often grown to a size where they wish to fission, but do not do so because of the difficulty involved” (Brosius 1992). The difficulty is in finding the timber and other building materials to add apartments for new lamin.

This has resulted in the situation today where an apartment (bilek) may house anywhere from one to nine lamin amidst grumbles and complaints about overcrowding. The word used is to “tumpang” (lodge, or lives as a guest) with others.
In a few cases, people *tumpang* wherever there is space. In other cases, they *tumpang* in the natal *lamin*, with siblings, or some other relative. The overcrowding is most acute at older longhouses like Long Jek, where sometimes two or more households may be sharing a room within a bilek – which is already partitioned three-generations deep.

In the multi-household apartment cases, the flooring is often raised to create platforms forming separate spaces for individual families. In some apartments, hammocks are also used for young men to relax. Where space and height permits (e.g. Long Malim) some hammocks are also hung outside under the flooring of the apartments.

![Figure 32 The verandah at Long Jek showing the large area in front of the headman's apartment.](image)

A number of the longhouses are divided into separate blocks and with the spaces in between providing open space for children to play or (as in the case of Long Wat) for a football field.

### 3.3.2 Meeting, ritual and ceremonial spaces

Where the communal verandah is large enough, public gatherings can be held. In some instances, there are purpose-built structures service both public and religious functions.

For example, meetings at Long Wat are convened either in front of the Headman’s apartment or inside in the living room of Penghulu Pau. For ceremonial and ritual occasions (e.g. church sessions) the people can gather on the verandah in from of the TK. The SIB (Sidang Injil Borneo, an indigenous evangelical church) chapel is used for worship once a month when their pastor paid a visit.

On the community grounds at the front entrance of Long Wat, there is a pole, which is used for traditional rituals. When important visitors (such as government officers or politicians) visit they are welcomed at the front entrance, which is usually decorated with traditional wood-shavings for the visit, a traditional ritual of welcome (Figure 33).

At Long Singu along the main road approaching the longhouse there is a SIB chapel consisting of a wooden detached building having an open space for meeting. A Methodist church from Sibu has recently (early 2010) improved the chapel and constructed sleeping quarters for the “gembala” (or visiting lay-preachers).

At Long Malim there a special hut built for would-be mothers to deliver their babies. It is situated behind the main longhouse block. The traditional midwife takes care of the delivery at the hut. There are two traditional midwives – one at Long Malim and the
other at Long Luar. The Department of Health has supplied the midwife at Long Malim with a pair of medical scissors to assist in the delivery.

3.3.3 **Spaces for social and economic activity**

The verandah of the longhouse is one of the most important areas for a variety of activities. For social activities, people normally meet at the area in front of the Headman's apartment or along the narrow verandah of individual apartments. Outside the longhouse on the ground, there are blacksmith forges for the blacksmiths to make *parangs* (bush knives) and other metal-based tools. Women may weave mats and baskets inside their apartments in the multi-purpose area or on the verandah, thus enabling to keep an eye out for children and monitor longhouse activities. (Figure 34)

![Figure 33 Long Verandah decorated to receive guests.](image)

During the day, the verandah adjoining the apartments is usually used for socialising and tending the young and infants. This is a very important area for most community activities and for holding social functions. At both Long Tangau and Long Luar, television and DVD sets have been placed on the verandah in order to share their use. The verandah is also used for making and finishing crafts such as parangs (finishing and sharpening the blades) and for weaving baskets and mats.

Another important use of this shared space is for communication and to enable dispute resolution. These communications take the form of ritualized speech, rather like "a monologue addressed to everyone and no-one at once" (Brosius 1987: 37). When a leader (usually the headman) has an important message to tell the community, he will do it from the space in front of his apartment (Langub 2004). For example, we witnessed leaders at Long Singu debating resettlement decisions early in the morning. One man walked up to the verandah, looked off into space, and spoke at length on the pros and cons of various actions. Others listened from inside or came outside to linger and listen, or spoke in turn to debate the points raised. On another occasion, an old man died in Long Malim. As the community went into mourning, one man walked up and down his verandah, speaking to no one in particular but calling on everybody to donate food and drinks for the wake. Just as common are the morning “discussions” and disputes on the verandah. These monologues vary in emotive content, sometimes expressing genuine exasperation and anger, are uttered in voices loud enough to be heard throughout the community.
and allow people to air grievances\(^9\), counsel the community, make announcements, or start an impromptu general discussion.

All these activities, ritual, behavioural, and oral, serve to make the verandah a hive of activity during the daytime, and with a significant role in the community life of the Penan.

As such, this important community feature should be a considered as an essential factor in the future design of the new longhouses.

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\(^9\) In October and November in Long Wat, the topic most frequently discussed (at times quarreled over) on the verandah was the theft of valuable durians from individual orchards.
3.4 Community investment in the longhouse

The construction of Penan longhouses is generally a fraught affair, in which communities have to seek help from the various timber companies as well as visiting political representatives. To our knowledge, Penan have not received government assistance similar to the Housing Aid Programme offered to the Orang Asli by the Ministry of Rural and Regional Development via the Department of Orang Asli Affairs. The process of building a new Penan longhouse may therefore take years over the course of a series of partial aid given by different timber companies. Companies may variously provide machinery to clear the site and level the ground for the structure and materials for construction. The community then provides the labour to build the partitions, flooring and rooms and may request assistance from other Penan communities. For example, men from Long Wat helped to build the Long Tangau longhouse. Zinc for roofing and sanitation facilities such as toilets may arrive later from government agencies.

Among the eight communities surveyed, the oldest longhouse is Long Jek (built in 1992) and the newest are Long Menapa (2006), Long Singu (2007), and Long Peran (2008). The Long Singu longhouse was an emergency construction following a flood that destroyed the former habitation sites along the riverbank.

The Long Wat longhouse was constructed with the assistance of several different timber companies in the 1990s and is now generally in need of repair for the verandah and roofing. The elders, the Penghulu, the Jawatan Kuasa Keselamatan dan Kemajuan Kampong (JKKK) (Village Security and Development Committee), and the TK have approached the logging camp for material and other assistance for the house maintenance and repair. However, they had not received assistance for house maintenance and repairs from government agencies or NGOs apart from the logging camp.

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A summary of the programme is available on the website of the Orang Asli Affairs Department, [http://www.jheoa.gov.my/](http://www.jheoa.gov.my/).
The longhouse at Long Luar is now run down. Built in 1995 by Remix and Samling timber companies there has been little maintenance since that time. Remix and Samling companies also built the longhouse at Long Tangau in 1994, and like Long Luar, it is also in poor condition. The 28-door longhouse of Long Menapa was built with the assistance of Shin Yang logging camp near to their former site with timber extracted from the surrounding Penan land. The surroundings are generally kept clean and the verandah floors are regularly swept, scrubbed and mopped. Also, no dogs are allowed inside the longhouse.

The main road in front of Long Menapa leads to a logging camp where the longhouse people often go to trade with the loggers and to purchase supplies from the canteen. There is also an oil palm estate nearby where some of the residents have found employment. The longhouses of Long Jek and Long Peran, located on the Seping, were built by Remix. Long Jek is now over-crowded and in need of renovation and repair. At the time of survey, the community was in the process of building toilets with the assistance from the Department of Health. The longhouse already has a gravity-fed water supply.

In the 1980s, Brosius noted that the communities also had komiti (committee) comprising several influential men “who are articulate and can make constructive comments in any particular discussion” (1987: 43). These komiti are still influential and operational. For example, before we were allowed to survey Long Malim’s sacred rocks (Batu Nawan and Batu Diah), our request was discussed at length by the komiti over the course of a daylong meeting, and collectively approved by them. At the same meeting, they also made a formal decision to send the headman to a new timber camp to negotiate work opportunities for the community. More recently, it is likely that Penan have also adapted leadership practices to government policies. Thus, the Penan communities are now establishing JKKK to cater for security and various aspects of development such as economics, health and welfare, with assistance from the District sub-office in Asap. Some of the activities of the JKKK include organising compound cleanings and general repairs of the longhouse structure. Visiting Government officials usually provide advice on health, cleanliness and beautification (such as planting flowers in the open area) cleanliness of their longhouse environment.

While all the Penan communities except Long Malim now live in longhouses, there are differences in the living conditions in terms of sanitation and hygiene among the various communities. There is an increasing tendency of reliance on outside assistance, especially from the timber companies and government agencies. As the Penan natural resources have declined their reliance on this external assistance has increased. The reliance on allowances from the timber companies has created a culture of expectation of assistance.

The Penan made the transition to more settled life in the 60s and 70s and were able to sustain themselves from the resources that surrounded them. They were formerly able to meet all the needs of their communities (including the establishment of their living quarters) through the resources surrounding them. As these resources have become less available, the Penan have come to rely on others to provide assistance for their living structures. These structures are now being built from materials that are not immediately available from the forest (roofing materials, concrete etc). Maintenance of the former structures was not a problem as one simply built a new structure from the surrounding resources. This is not possible when the construction materials are manufactured goods and construction and maintenance now involves a cash investment.

3.5 The longhouse apartment (bilek)

As with many rural areas throughout Sarawak, lighting in the community structures is generally poor with lights only in the living and cooking areas. On the verandah or ruai of the village headman, families have often lights for ‘public’ usage during
meetings and ceremonies. Some apartments have decorative lighting set up during celebrations such as Christmas or for the rice harvest festival.

Every apartment has a collection of bedding that includes mosquito nets and blankets. These are kept along with clothing and are generally folded and placed on open-shelves in the sleeping and living areas of the apartment.

The kitchens are generally equipped with a variety of utensils consisting mainly of a frying pan or wok, pots, and kettles and the usual assortment of simple cutlery, plates, cups and mugs. As families staying within the same block will usually share kitchen utensils, it is difficult to compile a detailed inventory of family ownership of the various utensils kept in any one kitchen. While some kitchens have gas stoves, the main means of cooking for most families is still using a wood-burning hearth for cooking (Figure 36).

Figure 36 Typical kitchen arrangement showing both a wood burning hearth and a gas stove.

Each family apartment has several divisions providing spaces for sleeping. These are usually separated as platforms or walled as individual rooms. A narrow walkway leads to the back of the apartment and opens into a multi-purpose space used for working – making crafts, storage, cooking and eating. The general layouts and space measurements for each community are outlined in Appendix Four.

Some longhouses have modified their space usage to cater for other specific purposes. For example, in Long Peran the Headman’s front verandah has been extended to serve as a meeting place for visiting church workers and to conduct children classes; it is also used as a meeting place to entertain visitors. At Long Menapa, the back of the house has been extended for cooking and storage. Modifications of the apartments such as these are generally required because of the limited space provided by original longhouse.

3.6 Use of Spaces around the longhouse

The open space in some of the longhouse compounds also includes utilities and facilities for common use. An example is the water stand for common use where the women do their daily wash. There are two sets of pipes on opposite sides of the compound. In addition, toilets are situated on the ground behind the apartment. While some toilets are shared between families, the Penghulu and the TK have their own individual toilets for the use of visitors. At present there is no rubbish disposal pit and no organised refuse collection in the community. Combustible rubbish is generally burned. At Long Luar and Long Tangau, there is a shared central water pipe that is
used for the daily washing and bathing. In the case of Long Malim, the community still uses the river for washing and bathing. However, due to the state of the main river, water for drinking and cooking is fetched from a clean stream across from the main river. Long Peran and Long Jek both have gravity-fed piped water to all the individual apartments.

Vegetable and fruit plots are another common feature of the open spaces around the longhouse compound. For example, along the access roads to Long Jek and Long Wat there are visible stands of fruit and palm trees planted by the communities. In other communities, there is garden cropping of common plants like tapioca, pineapple and banana. The food crops are mainly for domestic consumption with any seasonal excess being sold to the logging camps or as far away as Asap. Other food products (such as edible ferns and bamboo shoots) are gathered in forest.

3.7 Use of the riverbanks

As noted in the previous chapter, Penan often take their group names from the rivers of origin. Until today, rivers are highly significant markers of place and identity, and movement around the landscape still depends on having an intimate knowledge of the geography and layouts of the river systems.

All the dam-affected communities are located on major rivers or tributaries. In the daily lives of the communities, rivers are significant. The majority of those surveyed (with the exception of Long Luar and Long Singu) expressed a preference to be resettled near a river. The general view is that the communities depend on the rivers, as a means of livelihood and mobility and the river is an integral part of the overall forest landscape.

The riverbank also serves a social function where the children play while their mothers do their washing (Figure 37). Until roads connected the communities, rivers were the main routes of transit from one place to another. While the river formerly provided a source of food and drinking water, the recent land use changes and developments have had a large impact on the rivers and the Penan generally attribute to the decline of water quality to the arrival of the timber enterprises. For fishing, it is now necessary to travel farther upriver while for drinking, the waters in all the major rivers are now too polluted. Drinking water is now obtained by wading across the river to collect their drinking water from another stream.

Figure 37 A variety of activities on the river frontage at Long Wat.
3.8 Perceptions of Longhouse Living and Resettlement

The data compiled during the survey show that the Murum Penan communities are close knit with a well-developed sense of community and what this entails. As in all small communities, Penan belong to a densely interconnected social network and have entangled obligations to everybody else. What this means in practical terms is that almost everybody has a range of relatives and in-laws that he or she can count on for help, and can make demands on, for food, money, or some other form of support. To refuse to give can be a serious breach of adat (adet in Penan) and require conciliatory and compensatory measures. Some of the disputes that we observed during field surveys can be attributed to this. The Penan say that adat prohibits them from asking for help from just anybody, that there needs to be a pre-existing kinship relationship between a "giver" and a "taker." 11 However, the reach of their kinship networks in the community is so deeply interwoven that this is unlikely to be a problem. In cash-poor communities like these ones, social ties are an important source of capital that can yield endless interest: if someone else has what you lack (be it food, money, or employment opportunities), you can ask for a share by drawing on your ties to that person.

The values that the Murum Penan explicitly consider important about longhouse living and the location of the longhouse include:

- Living and working together;
- Helping one another; and
- Living near the river.

The majority of the people interviewed highlighted the sharing of food and mutual aid in times of need and bereavement as important aspects of life in a community (Table 32) (Figure 38). Some Penan interviewed at Long Singu emphasized this point with a negative example: they did not like it, they said, when successful hunters sell game to the timber camps for cash rather than share the portions within the community, and yet are not shy to ask for food when their supplies have run out. In other words, there should be reciprocal giving and taking.

![Figure 38 Communities have important social support functions.](image)

11 The relationship is also reciprocal. The kinship can follow from the exchange of mutual support rather than be the cause of the exchange.
As stated earlier, Penan communities are traditionally river-based settlements. Living close to river is considered important because of the natural resources the river can provide and the convenience of travelling. Travelling by river is still considered an important mode of transport due to the fact that it is more economical and more reliable compared to travelling by land. There is only one vehicle in the eight communities of the Murum area and for transport most have to rely on the charity of the logging company drivers for getting lifts with the company vehicles. Thus, land travel can be unreliable if no vehicles are going or very expensive if chartered.

Table 32 Key positive aspects in support of longhouse living (n = 248).

<table>
<thead>
<tr>
<th>Positive aspects</th>
<th>Frequency and Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed</td>
</tr>
<tr>
<td>Living &amp; working together</td>
<td>224 (90)</td>
</tr>
<tr>
<td>Helping one another.</td>
<td>225 (90)</td>
</tr>
<tr>
<td>Living near the river.</td>
<td>221 (89)</td>
</tr>
</tbody>
</table>

* DNK – do not know / did not answer

While the current community situation is important to the Penan and has desirable aspects, there are some problems that challenge survival. Day-to-day life is confronted by two main concerns: i) the need for basic service facilities such as clinic, schools, and transport; and ii) the cost of living. These two challenges are inter-related. The distance to the basic services means that costs must be incurred for transport. The distance also means that any purchased item has a higher price; again due to the cost of transport. The general loss of forest resources in the area means that there are fewer available resources to supplement their daily needs unless one travels long distances (again incurring costs either in time or transport). With more reliance on purchased goods, there is an increased need for cash and a means to generate an economy. These concerns are related to meeting the daily needs, which are becoming more difficult to meet through the resources in the vicinity of the longhouse.

As the cost of living becomes a greater concern, there is a demand for employment. All the communities are becoming more monetised as it becomes more difficult to survive on the remaining natural resources. The communities have been steadily growing in size for some time and the overcrowding has become a concern. These concerns are especially pertinent to the older generation who are more used to larger spaces and less people. The elders are seen to spend more time on the back verandah than the front ruai away from the hub of daily activities. (Table 33)

Table 33 Key concerns associated with the current living conditions (n = 248).

<table>
<thead>
<tr>
<th>Concerns</th>
<th>Frequency and Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Cost of living</td>
<td>199 (80)</td>
</tr>
<tr>
<td>Food shortage</td>
<td>190 (77)</td>
</tr>
<tr>
<td>Overcrowding</td>
<td>67 (27)</td>
</tr>
<tr>
<td>Employment</td>
<td>199 (80)</td>
</tr>
<tr>
<td>Distances from services (clinic, school, transportation etc.)</td>
<td>224 (90)</td>
</tr>
</tbody>
</table>

Related to the concerns and problems with the current living situation, the respondents overwhelmingly agreed that there should be better access to schools, clinics and other basic social services. Preferably, these facilities (especially the schools and clinics) should be within reasonably close proximity of their longhouses. An important supporting factor is that there should be employment opportunities and
economic assistance from the government in the form of services and income generating activities. The respondents also outlined the general requirements for resettlement. They wish to move to a place that is familiar to them (78%) and where there is potential for farming (87%). The forest remains an important component in their survival as indicated by the high percentage (89%) of respondents who mentioned this as important (Table 34).

Table 34 Improvements required to better longhouse living (n = 248).

<table>
<thead>
<tr>
<th>Improvements</th>
<th>Frequency and Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Better access to school &amp; other services</td>
<td>224 (90)</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>223 (90)</td>
</tr>
<tr>
<td>Economic assistance</td>
<td>224 (90)</td>
</tr>
<tr>
<td>Moving to place that is their choosing.</td>
<td>194 (78)</td>
</tr>
<tr>
<td>Not moving too close to other non-Penan longhouse communities.</td>
<td>171 (69)</td>
</tr>
<tr>
<td>Moving to a place with agriculture potential.</td>
<td>216 (87)</td>
</tr>
<tr>
<td>Moving to a place near forest where they can collect forest products</td>
<td>220 (89)</td>
</tr>
</tbody>
</table>

While the communities have provided a clear indication as to the requirements for resettlement, they also realise that there may have to be some changes considered. As to the type of changes they are prepared to consider to improve longhouse living, they replied that they would consider living closer to the service centres where there would be social services and government assistance and, if necessary be closer to other Penan communities (provided that the other conditions could be met) (Table 35).

Table 35 Changes the respondents would consider to improve living (n = 248).

<table>
<thead>
<tr>
<th>Changes</th>
<th>Frequency and Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Live closer to services &amp; government assistance.</td>
<td>224 (90)</td>
</tr>
<tr>
<td>Live closer to other Penan longhouses, if necessary.</td>
<td>183 (74)</td>
</tr>
</tbody>
</table>

Based on the responses outlined, the aspects the respondents consider most important to improve longhouse living can be summarised as follows:

- Foremost is to have an area of forest where they can collect forest products;
- Sufficient area of land suitable for farming; and
- An area of their choice (i.e. they are familiar with the area).

3.9 Long Wat and Long Malim Resettlement

Two of the Penan communities – Long Wat and Long Malim – lie below the level that may be inundated due to the construction of the cofferdam used to impound and divert water during the construction of the main dam structure. A major concern, given the scope of the study and the variety of concerns involved, was that arriving at a common solution for all affected communities would take some time necessitating a temporary move for at least Long Wat. To determine the requirements and concerns should this situation eventuate, a total of 64 respondents from both Long Wat and Long Malim were interviewed to gather their views and inputs regarding a temporary relocation.
In general the proportion of the respondents who were unwilling (55%) to move to a temporary site slightly exceeded that of those who were willing to move (45%). One of the influencing factors for this decision was the respect for the decision or advice of the community leaders. There was also a number (6%) who were resigned that they had no choice and others who expressed concern that the site be ready before they moved. Other concerns expressed were with regards to the future and the conditions of any agreement illustrating the need for continued consultation.

The views from the respondents of Long Wat and Long Malim on temporary relocation are shown in Table 36.

Table 36 Willingness to move to a temporary site; Long Wat and Long Malim (n = 64).

<table>
<thead>
<tr>
<th>Willing to move - reasons</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow longhouse leader.</td>
<td>21</td>
<td>33</td>
</tr>
<tr>
<td>Because we have, no choice but has to move.</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>For safety; the longhouse will be inundated due to the dam</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Temporary place can be used for tourism purpose - for home stay</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>On condition that all the facilities at the temporary site are completed before moving to the new place.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Can be provided with new houses, food, land, and money for resettlement in the new site.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sub-total willing to move</td>
<td>29</td>
<td>46</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unwilling to move - reasons</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow our Penghulu.</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>So hard to settle down in a new place; therefore better move once and stay there permanently.</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>Do not know our future yet.</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>We are not sure if there would be any written agreement to ensure our conditions for moving to the new site are honoured.</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Afraid our land will be taken by others people, so better stay in one place permanently.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>We are afraid we will be cheated.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>But if government gives us what we want, we will move to the temporary site.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Not sure the new temporary site is close to forest.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sub-total not willing to move</td>
<td>35</td>
<td>54</td>
</tr>
<tr>
<td>TOTAL respondents for Long Wat and Long Malim</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

On the preferred place(s) for temporary resettlement, the opinions of the respondents of Long Wat and Long Malim are presented separately. There were 44 respondents from Long Wat and 20 from Long Malim.

Of the 44 respondents interviewed from Long Wat, 50% said that they would leave the decision of resettlement site to the community leader while 32% preferred to move to the Tegulang river area for resettlement. The proportions of the respondents of Long Wat expressing their views are given in Table 37.

Table 37 Long Wat; preferred location for resettlement.
Of the 20 respondents from interviewed Long Malim the majority (60%) said that they would leave the decision on the choice of resettlement site to their community leader while 30% said that the Bu’ai River, would the preferred site (Table 38).

**Table 38 Long Malim; preferred places for resettlement.**

<table>
<thead>
<tr>
<th>Places</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow the leader decision</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>Long Sungai Bu’ai</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Tegulang</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total:</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

There are a number of items and agreements considered very important before the people are prepared to move into any resettlement site. These considerations can be divided into three categories; 1) the physical site requirements, 2) the economic needs, and 3) the institutional support. All these aspects are important to the Penan and form the basic outline of what is required for a resettlement agreements. The list of requirements provided by the Penan is outlined in Table 39. Importantly, all these requests should be included in a signed agreement with the government.

**Table 39 Resettlement requirements.**

<table>
<thead>
<tr>
<th>Physical</th>
<th>Economic</th>
<th>Institutional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houses to be built</td>
<td>Job opportunities</td>
<td>Agreements with government to be signed</td>
</tr>
<tr>
<td>Sufficient, suitable land</td>
<td>Compensation payment from government</td>
<td>Titles for land</td>
</tr>
<tr>
<td>Clinic</td>
<td></td>
<td>Programs for enhancing livelihoods</td>
</tr>
<tr>
<td>School</td>
<td>Programs for agriculture development programs</td>
<td>Assistance with documents from government</td>
</tr>
<tr>
<td>Near Batu Tungun</td>
<td></td>
<td>(e.g. IC)</td>
</tr>
<tr>
<td>Good roads / access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean water and electricity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational facilities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.10 Preferred resettlement location for the other six communities

The two communities of Long Jek and Long Peran are on the Seiping River, which is not part of the Murum water catchment. As these communities will not be directly affected by the impoundment of the Murum HEP they have expressed their desire to
remain in their present locations. However, both communities have expressed their desire to be provided with access to the civil services that other communities enjoy. The types of services they have requested include access to education facilities, health care and government assistance for development of agriculture. Both Long Jek and Long Peran have been surrounded by oil palm and plantation development on land that was formerly utilised by both communities. These developments have had a direct impact on the forest that provides the community with the bulk of their livelihoods. As the external economic activities have expanded, the ability of the communities to gather the forest products on which they survive has been adversely affected.

The other four longhouse communities situated along the Plieran River will not be affected by the initial cofferdam construction, however their communities will be inundated once the Murum HEP dam has been completed and the reservoir is filled. The four Plieran River communities are Long Singu, Long Tangau, Long Luar, and Long Menapa.

With regards to preferred locations for resettlement, the Plieran communities have not changed their preferences since they were first interviewed in 1994 during the Murum HEP feasibility study (SESCO, 1994). At that time, the communities indicated that they were not keen to move, but if required they would prefer to move further up river along the Plieran river. While the land use in this area has changed dramatically since 1994, this location is still preferred. Most respondents questioned said they would abide with the decisions of their community leaders on resettlement issue. Most of those interviewed in the four Plieran longhouses said they preferred to move to Long Metalun, further up river along the Plieran River. A number of those interviewed at Long Tangau preferred a site at Simpang 4, along the Penyuan River. However, this area was deemed not suitable, as the surrounding area will be inundated, leaving Simpang 4 as an island.

3.11 Conclusions

3.11.1 The advantages and limitations of Longhouse living

The communities have adopted a longhouse style of living (with local modifications) and desire basic modern infrastructure with access to other nearby social facilities (e.g. schools, clinics, roads, water and electricity). According to them, the advantages of this style of living are that they can maintain their important communal values of sharing and cooperation among members and households. The main disadvantages to this mode of living are the higher cost of settled living, the reductions in surrounding forest resources and overcrowding. Being settled means that the surrounding forest resources are more frequently exploited (even though the Penan are very conscious of sustainably managing the harvest). Being settled also means it is more difficult to expand the community structure if the land and financial resources are limited. This has resulted in the current situation in many of the communities where multiple households are sharing the available space. Nonetheless, the communities are vibrant and youthful and there is still sharing of resources and participation in social activities (including recent introductions such as karaoke, poco-poco dancing and other games).

3.11.2 Penan community design

While the Penan have generally adopted a longhouse style of community structure this has been largely due to the fact that this was the type of structure that was provided for them. Many of those interviewed have expressed the preference that their community consist of smaller apartment blocks consisting of 5-8 apartments that are linked by walkways. This housing layout would still retain an element of linked houses but not with all houses joined under one overall roof. This layout echoes the traditional layout of their original housing where the huts were built near to each other in a semi-circle or horseshoe shape facing inward. This traditional design provided an
element of privacy while facilitating communication between houses and families. The desired future community layout consists of several blocks of linked houses with some separation between the blocks. They have also requested that there should be a second floor for their bedrooms and private space for the family.

Historically, Penan communities were limited in size and would fission into smaller units when they grew. This strategy was linked to the availability of resources and the ability to move to new areas in search of new resources. Settled life has changed these strategies and the Penan are concerned that their accommodation and space be sufficient to accommodate growth in the community. This includes having sufficient land resources required to support the community as well as areas for expansion. The communities are generally cohesive and desirous of maintaining the sharing and support that typifies Penan society.

The Penan wish to have access to the services other communities have, but are also wary of the negative aspects of urban life. For this reason, they wish to maintain some control over the culture of their communities and keeping their communities independent [of other communities] is how they believe this can be achieved. The Penan desire for their children to be educated and want to have a better economic future, but they also wish to retain their identify as expressed through their communities and their way of living.
4 THE PENAN POPULATION

4.1 The household or domestic group

There are a total 312 households living in 161 apartments in the six Plieran and Danum communities. The number of households per apartment ranges from one to seven with the mode being one. Only eighty-one households have their own apartments. The vast majority of the single-household apartments are from the newest longhouses, Long Pelutan and Long Singu (see Chapter 2 for construction details). In the oldest longhouses, multi-household bilek are more common. The Long Singu example is instructive for planning purposes. The longhouse was built in 2007 when the old one was swept away in a flood. Originally, it was planned to accommodate 53 households, the number at the time. Now, less than three years later, it is already running short of space, with ten of the apartments housing two or three households each. A similar situation obtains at Long Pelutan (built in 2006), with eight of its 28 apartments housing two to four households each.

Based studies with the Western Penan (especially Long Jek) in the mid-1980s, Brosius (1992) observed:

"The Western Penan traditionally maintained a two-tier settlement system. The first level was the central base camp (lamin jau; literally "big lamin") in which all families maintained a shelter. The word lamin denotes both an individual shelter and household and—particularly when referred to with the modifier jau—to the larger camp or settlement. These settlements were quite large, often with over 20 shelters."

The second level of settlements is the lamin tanah (forest lamin): the satellite camps established for sago-collection and other food-procurement purposes. Today, the longhouse-based community has taken over the role of the lamin jau, while lamin tanah are still established for such purposes as fruit-collection, swidden farming, or hunting (when the resources or farming land are too far away for daily commutes home to the longhouse).

The notion of the lamin has endured until today and the term is used in this study in the household sense to refer to a production and consumption unit. A lamin approximates an industrial notion of nuclear family, often consisting of a couple, children of varying ages, and perhaps a widowed parent. Lamin compositions are fluid and follow the natural developmental cycle of households. The flow of resources traditionally was from the environment to the lamin rather than to the community, with the lamin making autonomous decisions about the further distribution of the resources within the household and to the wider community. One Penan man recalled that even in the pre-longhouse days, the larger lamin tended to lose out in the distribution (following the principle of "more men less share"). As such, it is in the Penan's interest to keep lamin size at a viable optimum. Today, when resources are received from external agents (such as various gifts from visiting dignitaries), they are channelled through the community, but each lamin will have a share and a voice in how the resources are distributed or managed for community use. It is important to note that apartments (bilek) are separate phenomena. The bilek is merely the physical structure while the lamin are the production and consumption units.

A new lamin is theoretically formed upon marriage. But whether the couple remains in the natal household depends on practical constraints: "Among contemporary Western Penan, households have often grown to a size where they wish to fission, but do not do so because of the difficulty involved" (Brosius 1992). The difficulty referred to is essentially economic (i.e. finding the timber and other building materials to add apartments for new lamin).
Household partition generally occurs when a young couple have two or more children and there are several such couples in the lamin. As households reach the optimum size, it becomes difficult to live together, let alone to find enough food for all. Ideally this is when the lamin breaks off and moves into a new apartment: “The Penan have a general belief that it is unhealthy and/or supernaturally dangerous for a household to grow too large, and that it is therefore desirable to fission when a household grows to a certain size” (Brosius 1987: 28). Whether this belief still holds much (if any) force today is debatable, however the instinct towards splitting of households has not changed.

Thus the situation today, where an apartment (bilek) may house anywhere from one to seven lamin, is not one of choice but rather one borne out of the ambient economic situation. Indeed there is much grumbling and complaints about overcrowding and the word used most of to describe this living situation is “tumpang” (which also refers to lodging with other or as a guest). In a few cases, people tumpang wherever there is available space within the longhouse. In other cases, the family will tumpang in the natal lamin, with siblings or with some other relative. This is not a matter of choice but of necessity and they essentially live wherever space is available. The overcrowding is most acute at the older longhouses like Long Jek, where sometimes two or more households may be sharing a room within a bilek—which is already partitioned three-generations deep.

4.2 Review of Penan population records

4.2.1 Murum Penan fertility, birth and mortality

The records for the Belaga Penan have been reasonably well documented including census information dating back to 1955 (Arnold, 1958). Analysis of this information not only provides an excellent overview of the population trends over time, but also highlights the fact that the Belaga Penan have been resident in the area for some time and their numbers have been growing. As Brosius (1987:18) outlined, population growth among the Penan in the Belaga area has been remarkable. Table 41 illustrates changes in population levels between 1955 and 2010:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Luar</td>
<td>71</td>
<td>112</td>
<td>200</td>
<td>184</td>
<td>195</td>
<td>237</td>
<td>190</td>
</tr>
<tr>
<td>Long Menapa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>(Long Luar and Long Menapa combined)</td>
<td>(342)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Tangau</td>
<td>58</td>
<td>59</td>
<td>95</td>
<td>160</td>
<td>157</td>
<td>168</td>
<td>102</td>
</tr>
<tr>
<td>Long Singu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>248</td>
<td></td>
</tr>
<tr>
<td>(Long Tangau and Long Singu combined)</td>
<td>(350)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Malim</td>
<td></td>
<td>133</td>
<td>203</td>
<td>76</td>
<td>87</td>
<td>80</td>
<td>205</td>
</tr>
<tr>
<td>Long Wat</td>
<td>89</td>
<td>122</td>
<td>200</td>
<td>167</td>
<td>184</td>
<td>214</td>
<td>321</td>
</tr>
<tr>
<td>Total population</td>
<td>218</td>
<td>426</td>
<td>698</td>
<td>587</td>
<td>623</td>
<td>699</td>
<td>1,218</td>
</tr>
</tbody>
</table>

1 Source: Arnold 1958
3 Source: Brosius 1987
4 Source: SESCO 1994. The numbers in this column are smaller than in Khoo’s presentation of the data, following adjustment for double-listings.

12 To lodge with.
5 Source: field data

6 Long Menapa split off from Long Luar in 1996/1997, following Long Singu’s split from Long Tangau in 1996. The populations are totaled for comparison purposes (Long Menapa with Long Luar; Long Singu with Long Tangau).

7 For the 1971, 1978, and 1993 censuses, Long Malim was physically distributed and therefore censused in two locations: at the home community in Long Malim or Long Tup along the Danum, and at Long Lawan in Tegulang. These are the totaled numbers.

The population numbers generally show a high rate of growth over the past 55 years (Figure 41). During this period there were increases from 71 to 341 inhabitants for the Long Luar group (480.3%), from 58 to 321 for the Long Tangau group (553.4%), and from 89 to 320 (359.6%) for the Long Wat group. Since 1955, the annual population growth is 4.9 for the Long Luar group, 4.8 for the Long Tangau group, and 4.2 for Long Wat, while the same number for Long Malim from 1971 onwards is 1.7.

![Figure 41 Population growth in the six affected communities.](image)

Overall, the total population of the communities in the study area has increased from 218 in 1955 to 1181 in 2010 (a 541.7% increase overall with an annual population growth of 17.5). Of note however, is the marked upward increase for the most recent period. There has been a sharp upward trend in the population since 1993. The illustration reflects this for Long Wat and Long Malim but this trend is hidden for the other communities. This is due to the fact that the community of Long Menapa split from Long Luar and Long Singu split from Long Tangau (Note: There was no data for the communities of Long Pelutan and Long Singu prior to 2010). These increases in population levels might correspond to the changes in the Penan living circumstances. Namely:

1. Change to more sedentary life and shifts to longhouse living in the 1960s and 1970s;
2. Immediate post-sedentarization adjustments from the 1970s to 1980s; and
3. The expansion of timber concessions providing more access routes via the timber roads, greater spatial mobility, and correspondingly more contact with outsiders since the late 1980s.
The environmental and social conditions in this most recent period have been so drastically altered that there should be an influence on the demography. There have been changes in road use, the broader social environment, diet and nutrition, energy expended for food production, environmental quality, and the disease profile. Any of these alone or in combination with the others will have some impact on the birth and death statistics. Aggregating the data above, we see that the population overall has grown at an annual average of nearly 28.4 between 1993 and 2010 (Table 42).

Table 42. Population changes over 20-year intervals, 1955-2010

<table>
<thead>
<tr>
<th>Period</th>
<th>Average annual population change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long Luar/Long Menapa</td>
</tr>
<tr>
<td>1955-1971 (16 years)</td>
<td>2.6</td>
</tr>
<tr>
<td>1971-1993 (22 years)</td>
<td>5.7</td>
</tr>
<tr>
<td>1993-2010 (17 years)</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Every single community group follows this pattern with Long Malim showing the most startling change: from a decline of -2.4 to a growth of 7. The Long Luar and Long Wat groups show the most stability in terms of population change, while the Long Tangau group has grown dramatically since the 1996 split (this trajectory is mainly propelled by Long Singu).

The most complete dataset for comparison is the SESCO census of 1993 (SESCO 1994). Thus, for planning purposes, the figures for this most recent period (1993–2010) are probably the more indicative of population trends in the foreseeable future (Table 43). There are two major drivers of population growth: natural increase (births) and in-migration. Comparing the 1993 data with 2010 names and numbers provides a general representation of the population flow patterns.

Table 43. Population trends in the affected communities (1993 - 2010).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>237</td>
<td>168</td>
<td>80</td>
<td>214</td>
<td>699</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Population losses:
(a) Deceased 1993-2010 -49 -23 -20 -43 -135
(b) Fission -57 -84 0 0 -141
(c) "Internal migration"1 -48 -31 -4 -24 -127
(d) "External migration"2 -10 -6 -1 -3
(e) Untraceable -2 0 0 0 -2

Remaining with the community 2009–2010 71 24 55 144 296

Base population: core community and internal migrants3 85 61 50 123 81 154 554

Population gains:
While there was insufficient field time to gather detailed fertility and child mortality data, the results of the interviews suggest that many couples have lost at least one or two children in their lifetimes. Observations by both the researchers and the Penan themselves suggest that Long Wat and Long Singu have more births than the other communities. Table 43 above gives some estimates.

Based on the information gathered, there have been 571 births since 1993. However, there is no reliable information regarding the corresponding child mortality rates. As outlined in Table 44, Long Wat has had the most births, while Long Tangau appears to be hardly reproducing. One of the explanations for this may be the tendency of Long Tangau people to move or marry out of the community (exogamy). As outlined in Table 43 above, following the 1996 fission Long Singu has more than doubled its original population, while Long Tangau has hardly done so. However, there is one important caveat: the Long Tangau population tends to fluctuate greatly (e.g. from over a hundred in November to 72 in January) due to a high degree of exogamy (marriage outside the community), which leads to much “reciprocal mobility” between Long Tangau and other communities, especially neighbouring Long Luar and Long Singu. Thus, these numbers are illustrative rather than absolute.

### Table 44 Births in the affected communities (1993 - 2010).

<table>
<thead>
<tr>
<th>Community</th>
<th>Births 1993–2010</th>
<th>Average births per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Luar</td>
<td>93</td>
<td>5.5</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>76</td>
<td>4.5</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>20</td>
<td>1.2</td>
</tr>
<tr>
<td>Long Singu</td>
<td>118</td>
<td>6.9</td>
</tr>
<tr>
<td>Long Malim</td>
<td>106</td>
<td>6.2</td>
</tr>
<tr>
<td>Long Wat</td>
<td>158</td>
<td>9.3</td>
</tr>
<tr>
<td>Total</td>
<td>571</td>
<td>33.6</td>
</tr>
</tbody>
</table>
Table 45 outlines the deaths in the Murum Penan communities since 1993. This information has been gathered through interviews with the community as well as through comparison of the 1993 census data and the information gathered in the present study. Overall, the communities have had less than 8 deaths per year.

**Table 45 Mortality in the affected communities (1993 - 2010)**

<table>
<thead>
<tr>
<th>Community</th>
<th>Deceased 1993–2010</th>
<th>Average deaths per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Luar and Long Menapa combined</td>
<td>49</td>
<td>2.9</td>
</tr>
<tr>
<td>Long Tangau and Long Sgu combined</td>
<td>23</td>
<td>1.4</td>
</tr>
<tr>
<td>Long Malim</td>
<td>20</td>
<td>1.2</td>
</tr>
<tr>
<td>Long Wat</td>
<td>43</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
<td>7.9</td>
</tr>
</tbody>
</table>

4.2.2 Changes in the community size and composition

Over the years, due to the varied purposes of the data being collected and the methods employed, household data has not been consistent from one census to the next. The most complete census carried out thus far has been by Khoo in 1993. Table 46 provides a comparison between the data collected in 1993 and the information collected in 2009/2010 for the six Danum-Plieran communities.

**Table 46 Comparison of bilek populations for the affected communities (1993 - 2010).**

<table>
<thead>
<tr>
<th>Community</th>
<th>Total bilek</th>
<th>1993 Average bilek populations (SD)</th>
<th>Population range</th>
<th>Total bilek</th>
<th>2009 -2010 Average bilek populations (SD)</th>
<th>Population range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Luar</td>
<td>16</td>
<td>14.8 (7.7)</td>
<td>5–31</td>
<td>14</td>
<td>13.4 (4.5)</td>
<td>6–22</td>
</tr>
<tr>
<td>Long Menapa</td>
<td></td>
<td></td>
<td></td>
<td>28</td>
<td>5.5 (2.3)</td>
<td>2–11</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>32</td>
<td>5.3 (1.9)</td>
<td>2–9</td>
<td>14</td>
<td>5.1 (2.4)</td>
<td>2–9</td>
</tr>
<tr>
<td>Long Sgu</td>
<td></td>
<td></td>
<td></td>
<td>53</td>
<td>4.7 (2.2)</td>
<td>1–12</td>
</tr>
<tr>
<td>Long Malim</td>
<td>20</td>
<td>4 (1.7)</td>
<td>2–8</td>
<td>20</td>
<td>10 (5.8)</td>
<td>2–26</td>
</tr>
<tr>
<td>Long Wat</td>
<td>21</td>
<td>10.2 (4.7)</td>
<td>4–24</td>
<td>32</td>
<td>10 (4.3)</td>
<td>3–20</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>7.8 (5.8)</td>
<td>2–31</td>
<td>161</td>
<td>7.3 (4.6)</td>
<td>1–26</td>
</tr>
</tbody>
</table>

Demographic data was collected over several months from late 2009 to 2010 and adjustments made for births, deaths and marriages that occurred during the period of study.

Overall, the number of apartments has doubled, due to: 1) the Long Sgu–Long Tangau split in 1996 and the Long Luar–Long Menapa split later that same year, and 2) recent construction of new longhouses for Long Sgu and Long Menapa by timber companies. These factors have afforded the people in the communities an opportunity to reorganize their living spaces. Long Luar and Long Malim have shown little change from 1993, Long Tangau has half the number of apartments (although bilek populations remain similar), while the inverse has happened at Long Wat. In Long Wat, bilek numbers have increased by a third, but bilek populations remain the same. Long Luar has showed the most internal variations in 1993, with bilek populations ranging from five to 31. Currently Long Malim has the greatest variation with bilek populations ranging from two to 26. Overall, the average bilek populations
have remained the same; i.e., although the numbers of apartments have doubled, the housing needs have also doubled (due to population increase), so that they are essentially living at the same standard as before.

Household sizes also show continuities with previously collected information. As with the bilek numbers, the total number of lamin has doubled since 1993, increasing from 148 to 310. However, the average lamin populations remain the same, at 4.7 (Standard Deviations of 2.1) (Table 47). On the other hand, the modal household size has gone down from 5 in 1993 to 2 in 2009. This is most likely due to the recent construction of new longhouses and apartments, which gave households an opportunity to partition. There appears to be a natural threshold in household sizes, with just one household reaching the “maximum” size of 12 persons, and two households of ten members. Long Tangau and Long Wat had the largest lamin populations before and now it is Long Malim; which is possibly the fastest growing community in the group. Long Tangau has become the smallest community, both in absolute population numbers and with regards to household groupings, while the other communities have more or less similar household sizes.

Table 47 Comparison of lamin populations in the affected communities (1993 - 2010).

<table>
<thead>
<tr>
<th>Community</th>
<th>Total lamin</th>
<th>Average lamin populations (SD)</th>
<th>Population range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Luar</td>
<td>61</td>
<td>3.9 (2)</td>
<td>1–11</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>39</td>
<td>3.9 (1.6)</td>
<td>2–8</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>32</td>
<td>5.3 (1.9)</td>
<td>2–9</td>
</tr>
<tr>
<td>Long Singu</td>
<td>64</td>
<td>3.9 (2)</td>
<td>1–12</td>
</tr>
<tr>
<td>Long Malim</td>
<td>20</td>
<td>4 (1.7)</td>
<td>2–8</td>
</tr>
<tr>
<td>Total</td>
<td>148</td>
<td>4.7 (2.1)</td>
<td>1–11</td>
</tr>
<tr>
<td>Total</td>
<td>310</td>
<td>4.7 (2.1)</td>
<td>1–12</td>
</tr>
</tbody>
</table>

While the populations of the communities have, in general, increased there has been little change in the gender composition (Table 48). Since the census in 1993, there have been two new communities, Long Pelutan and Long Tangau. However, this development has had little or no impact on the overall gender composition and the ratio of males to females in the community. In the six communities considered, the ratio of males to females is 1.04 (i.e. there are 1.04 males for each female) (Table 49). This ratio has changed little since 1993 when the ratio of males to females was 1.02.

Table 48 Change in the gender distribution of the Murum Penan population.

<table>
<thead>
<tr>
<th>Community</th>
<th>1993</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Long Luar</td>
<td>92 (48.4%)</td>
<td>98 (51.6%)</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>82 (53.6%)</td>
<td>70 (46.4%)</td>
</tr>
<tr>
<td>(Long Luar and Long Menapa combined)</td>
<td>120 (50.6%)</td>
<td>117 (49.4%)</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>47 (48.6%)</td>
<td>55 (51.4%)</td>
</tr>
<tr>
<td>Long Singu</td>
<td>127 (51%)</td>
<td>121 (49%)</td>
</tr>
<tr>
<td>(Long Tangau and Long Singu combined)</td>
<td>85 (50.6%)</td>
<td>83 (49.4%)</td>
</tr>
<tr>
<td>Long Malim</td>
<td>42 (53.2%)</td>
<td>37 (46.8%)</td>
</tr>
</tbody>
</table>
Table 49 Change in the ratio of males to females in the Murum Penan communities.

<table>
<thead>
<tr>
<th>Community</th>
<th>1993</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Luar</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>Long Menapa</td>
<td>1.16</td>
<td></td>
</tr>
<tr>
<td>(Long Luar and Long Menapa combined)</td>
<td>1.03</td>
<td>1.03</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td>Long Singu</td>
<td>1.04</td>
<td></td>
</tr>
<tr>
<td>(Long Tangau and Long Singu combined)</td>
<td>1.02</td>
<td>1.02</td>
</tr>
<tr>
<td>Long Malim</td>
<td>1.14</td>
<td>1.14</td>
</tr>
<tr>
<td>Long Wat</td>
<td>0.96</td>
<td>1.03</td>
</tr>
<tr>
<td>Total</td>
<td>1.02</td>
<td>1.04</td>
</tr>
</tbody>
</table>

4.3 Present population and origins

The total population of the Murum Penan community as of March 2010 was 1531 persons consisting of 395 household units (lamin) in 8 communities. The population figures include all the eight communities along the Danum, Plieran and Seping Rivers as well as those temporarily residing in Sungai Asap to accompany their school-going children. The largest community is Long Wat with 83 households and a total population of 321. The smallest community is Long Tangau with 28 households and a total population of 102. The average household size is 3.9 persons. The Murum HEP will directly affect six Penan communities comprising 312 household units (1218 persons) (Table 410).

Table 410 Murum Penan Community Population (8 Longhouses).

<table>
<thead>
<tr>
<th>Name</th>
<th>Female</th>
<th>Male</th>
<th>Community population totals</th>
<th>Sex ratio**</th>
<th>Total households</th>
<th>Av household sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Jek</td>
<td>80</td>
<td>91</td>
<td>171</td>
<td>1.14</td>
<td>49</td>
<td>3.5</td>
</tr>
<tr>
<td>Long Peran</td>
<td>76</td>
<td>66</td>
<td>142</td>
<td>0.87</td>
<td>34</td>
<td>4.2</td>
</tr>
<tr>
<td>Seping Subtotals</td>
<td>156</td>
<td>157</td>
<td>313</td>
<td>1.01</td>
<td>83</td>
<td>3.8</td>
</tr>
<tr>
<td>Plieran</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Luar</td>
<td>98</td>
<td>92</td>
<td>190</td>
<td>0.94</td>
<td>52</td>
<td>3.7</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>70</td>
<td>82</td>
<td>152</td>
<td>1.17</td>
<td>39</td>
<td>3.9</td>
</tr>
<tr>
<td>Long Singu</td>
<td>121</td>
<td>127</td>
<td>248</td>
<td>1.05</td>
<td>64</td>
<td>3.9</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>55</td>
<td>47</td>
<td>102</td>
<td>0.85</td>
<td>28</td>
<td>3.6</td>
</tr>
<tr>
<td>Plieran Subtotals</td>
<td>344</td>
<td>348</td>
<td>692</td>
<td>1.01</td>
<td>183</td>
<td>3.8</td>
</tr>
<tr>
<td>Danum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Malim</td>
<td>97</td>
<td>108</td>
<td>205</td>
<td>1.11</td>
<td>46</td>
<td>4.4</td>
</tr>
<tr>
<td>LW (longhouse)</td>
<td>84</td>
<td>85</td>
<td>169</td>
<td>1.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LW-Asap*</td>
<td>66</td>
<td>65</td>
<td>131</td>
<td>0.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LW-U Nyaving</td>
<td>8</td>
<td>13</td>
<td>21</td>
<td>1.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Wat all</td>
<td>158</td>
<td>163</td>
<td>321</td>
<td>1.03</td>
<td>83</td>
<td>3.9</td>
</tr>
<tr>
<td>Danum Subtotals</td>
<td>255</td>
<td>271</td>
<td>526</td>
<td>1.06</td>
<td>129</td>
<td>4.1</td>
</tr>
</tbody>
</table>
In terms of gender balance, the Penan communities have a relatively even split in gender with 50.5% male and 49.5% female (Table 411). Overall, the community is very young with 74% under the age of 30 years and 55% under the age of 20 years. The working or productive population of the community (ages of 20 and 60) corresponds to 42% of the total population with only 4% of the population older than 60 years (Figure 42).

**Table 411 Murum Penan communities distribution by age and gender.**

<table>
<thead>
<tr>
<th>Age class</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>% Male</th>
<th>% Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>238</td>
<td>232</td>
<td>470</td>
<td>50.64%</td>
<td>49.36%</td>
</tr>
<tr>
<td>11-20</td>
<td>166</td>
<td>193</td>
<td>359</td>
<td>46.24%</td>
<td>53.76%</td>
</tr>
<tr>
<td>21-30</td>
<td>152</td>
<td>141</td>
<td>293</td>
<td>51.88%</td>
<td>48.12%</td>
</tr>
<tr>
<td>31-40</td>
<td>68</td>
<td>64</td>
<td>132</td>
<td>51.52%</td>
<td>48.48%</td>
</tr>
<tr>
<td>41-50</td>
<td>61</td>
<td>56</td>
<td>117</td>
<td>52.14%</td>
<td>47.86%</td>
</tr>
<tr>
<td>51-60</td>
<td>48</td>
<td>40</td>
<td>88</td>
<td>54.55%</td>
<td>45.45%</td>
</tr>
<tr>
<td>61-70</td>
<td>28</td>
<td>22</td>
<td>50</td>
<td>56.00%</td>
<td>44.00%</td>
</tr>
<tr>
<td>71+</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>57.14%</td>
<td>42.86%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>765</td>
<td>751</td>
<td>1516</td>
<td>50.46%</td>
<td>49.54%</td>
</tr>
</tbody>
</table>

Note: Numbers exclude those for whom age data is not available (difference of < 20)

**Figure 42 Population pyramid for the Plieran, Danum, Seping Penan communities.**

To gain an understanding of the potential and actual numbers of school-age children, the population data was divided into categories corresponding to school entry years and level of schooling they would be eligible for in 2013. For the age categories from three to 12 years, they would follow the normal school system consisting of kindergarten, primary and lower secondary. However, for those children who have
not received schooling, especially those in the 13 to 14 year category, they would require remedial training to catch up the lost years. For those above 15 years, remedial schooling is also required, however the emphasis would probably be better placed on specialised skills and vocational training (Figure 43).

Figure 43 The communities are characterised by young populations.

As can be seen from the demographic data (Table 412) there are likely sufficient numbers of students in the various communities to create two full schools; one for the Plieran population and another for the Danum.

Table 412 Number of school age children for various entry school levels in 2013.

<table>
<thead>
<tr>
<th>Age</th>
<th>School level in 2013</th>
<th>Long Malim</th>
<th>Plieran</th>
<th>Seping</th>
<th>Long Wat</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–2</td>
<td>Infant class</td>
<td>18</td>
<td>46</td>
<td>21</td>
<td>26</td>
<td>111</td>
</tr>
<tr>
<td>3-5</td>
<td>Kindergarten</td>
<td>16</td>
<td>55</td>
<td>30</td>
<td>31</td>
<td>132</td>
</tr>
<tr>
<td>6-10</td>
<td>Primary</td>
<td>25</td>
<td>93</td>
<td>42</td>
<td>39</td>
<td>199</td>
</tr>
<tr>
<td>1-10 (age not determined)</td>
<td></td>
<td>8</td>
<td>13</td>
<td>2</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>67</td>
<td>207</td>
<td>95</td>
<td>101</td>
<td>470</td>
</tr>
<tr>
<td>11-12</td>
<td>Lower secondary</td>
<td>14</td>
<td>30</td>
<td>9</td>
<td>15</td>
<td>68</td>
</tr>
<tr>
<td>13-14</td>
<td>Remedial</td>
<td>9</td>
<td>40</td>
<td>25</td>
<td>22</td>
<td>96</td>
</tr>
<tr>
<td>15-20</td>
<td>Vocational</td>
<td>29</td>
<td>91</td>
<td>42</td>
<td>28</td>
<td>190</td>
</tr>
<tr>
<td>11-20 (age not determined)</td>
<td></td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>52</td>
<td>165</td>
<td>76</td>
<td>67</td>
<td>360</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>119</td>
<td>372</td>
<td>171</td>
<td>168</td>
<td>830</td>
</tr>
</tbody>
</table>

The Murum Penan communities are long-term residents as demonstrated by their places of birth. When asked their place of birth 90% of the respondents indicated that they were born in their respective communities; i.e. Long Wat; Long Luar; Long Tangau; Long Jek; Long Peran; Long Malim; and Long Singu. Only 4% of the
respondents living in the communities are non-Penan or non-Murum Penan (6% were not sure of their place of birth). These latter respondents are persons who have married into the community and have settled with them. The majority of those not born in the communities are Iban followed by Kenyah, Penan from the Silat and Belangan Rivers, Indonesians, Chinese, Kayan and Lun Bawan. Most of these ‘outsiders’ came to the area as timber or estate workers. Of the eight longhouse communities, only Long Peran did not report any marriages with non-Penan (Table 413).

### Table 413 Place of birth for the Murum Penan.

<table>
<thead>
<tr>
<th>Place</th>
<th>Freq.</th>
<th>% Of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Wat</td>
<td>304</td>
<td>20</td>
</tr>
<tr>
<td>Long Luar</td>
<td>261</td>
<td>17</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>224</td>
<td>15</td>
</tr>
<tr>
<td>Long Jek</td>
<td>173</td>
<td>11</td>
</tr>
<tr>
<td>Long Peran</td>
<td>128</td>
<td>8</td>
</tr>
<tr>
<td>Long Singu</td>
<td>122</td>
<td>8</td>
</tr>
<tr>
<td>Long Malim</td>
<td>103</td>
<td>7</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>63</td>
<td>4</td>
</tr>
<tr>
<td>Iban</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Kenyah</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Long Urun</td>
<td>7</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Penan Silat</td>
<td>7</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>6</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Penan Talun</td>
<td>5</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Long Tanyit</td>
<td>4</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Lusong Laku</td>
<td>4</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Chinese</td>
<td>3</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Long Abit</td>
<td>2</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Long Luar/Long Tangau</td>
<td>2</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Long Lawan (Kenyah)</td>
<td>1</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Lun Bawang</td>
<td>1</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Kayan</td>
<td>1</td>
<td>1&lt;1</td>
</tr>
<tr>
<td>Not Sure</td>
<td>89</td>
<td>6</td>
</tr>
<tr>
<td>Total:</td>
<td>1531</td>
<td>100</td>
</tr>
</tbody>
</table>

### 4.4 Possession of birth certificates and MyKad

Among the Penan there is a universal desire to be registered and to have official identity cards so that they can benefit from government assistance programmes and be recipients of the government services requiring proof of identity. The results of the household survey indicate that while a reasonably large proportion (60%) (Table 414) have birth certificates the majority of the community (over 80%) are still without identity cards (Table 415).

### Table 414 Number of Murum Penan with birth certificates.

<table>
<thead>
<tr>
<th>Possession of Birth certificate</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>939</td>
<td>60</td>
</tr>
<tr>
<td>No</td>
<td>562</td>
<td>37</td>
</tr>
<tr>
<td>Not Sure</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Total:</td>
<td>1531</td>
<td>100</td>
</tr>
</tbody>
</table>

Chemsian Konsultant Sdn Bhd
Of the people who do not have a MyKad, 37% are below the registration age. For the remaining proportion that does not have a MyKad, 41% have applied for one in 2009 but are yet to receive the card. Ownership of Mykad is an important issue as this document will be important for administering compensation payments, resettlement agreements, education registration, and provision of other government services.

Table 415 Number of Murum Penan with MyKad identity cards.

<table>
<thead>
<tr>
<th>Name of Long House</th>
<th>Number of persons</th>
<th>As % of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Wat</td>
<td>54</td>
<td>17</td>
</tr>
<tr>
<td>Long Malim</td>
<td>45</td>
<td>22</td>
</tr>
<tr>
<td>Long Singu</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Long Luar</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Long Jek</td>
<td>54</td>
<td>32</td>
</tr>
<tr>
<td>Long Peran</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td>Have card, but absent during survey</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td><strong>Total with Card:</strong></td>
<td><strong>279</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td><strong>Total do not have Card:</strong></td>
<td><strong>1,252</strong></td>
<td><strong>82</strong></td>
</tr>
<tr>
<td><strong>Reasons Do Not have card:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applied October 2009, not yet received.</td>
<td>624</td>
<td>41</td>
</tr>
<tr>
<td>Cannot remember whether applied</td>
<td>39</td>
<td>3</td>
</tr>
<tr>
<td>Eligible but yet to apply</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Not eligible, below 12 years old</td>
<td>569</td>
<td>37</td>
</tr>
<tr>
<td><strong>GRAND TOTAL (Total population in 8 longhouses):</strong></td>
<td><strong>1531</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

4.5 Educational attainment

Given the past isolation and inaccessibility of the Murum communities, it is understandable that education levels among adults is low. However, this is not for lack of interest or desire. Brosius noted in 1987: “Many younger Penan in the Belaga District are now able to read and write, and this trend is growing. Interestingly, many of these people are self-taught, having learned either from Kayan/Kenyah friends or from the one or two persons in their community who may have attended school... Penan are eager for education” (168). These achievements are all the more remarkable, given the lack of reading and writing materials in the communities.

The majority (95%) of the Murum Penan adults have not had formal school education (Table 416). Of those who managed to attend school, 50 have varying levels of primary school education and 33 have secondary school education. There is one university graduate and he is now employed as Sarawak Administrative Officer at Sungai Asap District Office. The strong desire to learn is evidenced by the examples of adult education among many of the communities. Continuing the trend observed by Brosius over 20 years ago, many adult men in the Murum communities acquired reading and writing skills through self-study and learning from those who have received schooling. Church leaders who visit the longhouses have also played a part in providing adult education for those who are interested. There is considerable scope for expanding the adult education opportunities and providing a variety of
training and vocational programmes. Evidence in support of the strong desire for education is the effort many of the community members have expended to have their children educated in Asap.

Table 416: Murum Penan Adult Education levels (highest attained).

<table>
<thead>
<tr>
<th>Education</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>Primary – UPSR</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Secondary</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>Secondary – PMR</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Secondary - SPM</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>University - Degree</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Never attended school (adults) / Not yet attended school (children)</td>
<td>1390</td>
<td>95</td>
</tr>
<tr>
<td>Total:</td>
<td>1475</td>
<td>100</td>
</tr>
</tbody>
</table>

At present, there are 56 children attending primary schools at Sungai Asap and other schools in the Belaga District (Table 417). This number is only 14% of the total number of school age children in the eight Murum Penan communities (Table 412). The majority of those studying (52%) attend school at Sungai Asap where they board or stay with parents and relatives, returning to the longhouse during term holidays. For the 86% of the children who do not or are not able to attend school a variety of reasons are given:

- No more places were available in the boarding school;
- Non-availability of transport to send the children to school;
- Lack of financial means to send their children; and
- Do not want their children to be away from them.

Understandably, there is a reluctance to send very young children away to boarding school. This desire to keep their children close to the family is the main reason why a number of families from Long Wat have temporarily moved to Sungai Asap. Here they stay in temporary quarters near Uma Nyaving (a Kayan community) to be near their school-going children. Discussions indicated that the families’ presence near the school provides emotional support for the children and helps the children adjust to the school culture.

Table 417: Schools and numbers of Murum Penan children attending.

<table>
<thead>
<tr>
<th>School</th>
<th>Number of students</th>
<th>%</th>
<th>Class level</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK Batu Keling, Sungai Asap</td>
<td>29</td>
<td>52</td>
<td>Kinder garden</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 6</td>
<td>6</td>
</tr>
<tr>
<td>SK Long Urun</td>
<td>2</td>
<td>3</td>
<td>Std 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std 3</td>
<td>1</td>
</tr>
</tbody>
</table>
4.6 Communications and Population Mobility

4.6.1 Travel

Changes in the transport environment, and corresponding changes in Penan patterns of long-distance travel, are fairly recent. Brosius (personal communication, 2009) reported that as recent as the mid-1980s many Penan had never travelled far beyond the forest and were not familiar with the material culture of the urban environments. Until the expansion of the road networks beginning with the arrival of the timber extractors, travel was mainly on foot and by boats. Long-distance travel is still difficult and expensive in the Belaga interior but, as noted earlier, it is definitely easier now than before. The Murum Penan continue to undertake a lot of travel, and they can now go farther beyond the community than they ever did before. However, the costs of travel remain high for the Penan. For the eight Murum Penan communities, the closest destination where both shopping/marketing facilities and social services are available is Sungai Asap while for shopping needs alone it’d be Aloi Junction (Table 418).

Most of those interviewed (61%) reported to have visited this Sungai Asap. Farther afield is Bintulu, which was the second most frequented place of visit as reported by almost a quarter of the respondents. The third most frequented place was Belaga, previously the nearest outpost for the communities before the construction of road access to Asap and Bintulu. Very few of those interviewed reported having travelled beyond the three main towns to other areas in Sarawak or overseas. Notable long-distance travellers include the Penghulu, Pao Tului, and the various headmen, who are often taken or flown to official meetings in urban centres like Miri and Kuching. Apart from them, the few that have travelled beyond Bintulu are most often associated with either government agencies or NGOs as part of programmes to assist the Penan. One of the more recent destinations for a number of the headmen and community leaders was the Batang Ai HEP. This trip was organised by an NGO to provide an understanding about resettlement.

Table 418 Murum Penan travel history.
4.6.2 Inter-longhouse visits

Visiting between longhouses is a fairly regular occurrence as indicated by the results of the household survey. One basis for this frequency is kinship. As noted in Chapter 1, the various dam-affected communities are interrelated via bonds of kinship and marriage. These ties are maintained by visiting relatives in other communities (as seen in Table 3-2 below, visiting relatives is the main reason given for the visits). Emotionally, these visits express the bonds that relatives in different communities feel for each other. Frequently it is because people have married out of the community (exogamy), and they practise reciprocal residence (living with the community of one spouse for a length of time, then switching to the other spouse's community, and so on in a back-and-forth process). But there are also economic and political reasons for the visits. Kinship ties further extend the networks of mutual aid and support available to people (described earlier). For example, during the 2010 season, relatives from Long Wat went to help Long Malim households harvest their rice. In return, they could expect a share. In 2009, a number of Long Tangau kin went to Long Wat to enjoy the fruit season there. Jurally, people who have moved out of a community are free to return and so long as they do so, they retain membership rights in their natal community. But they do have to keep returning (i.e., visiting) to activate those rights (the penalty for not keeping in touch is that the rights will lapse after a length of time). Some people visit other communities so often that they virtually are full-time members of those communities and are entered as residents in household lists. As the Penan reported, many of them, either through their own ties or those established by ancestors, can claim rights in multiple communities. They can therefore visit those places and stay for any length of time. Once, for example, I asked Penghulu Pao why a certain gentleman from Long Jek was visiting Long Wat. He said that the man in question was just visiting “because he has every right to do so. He has relatives here; he is not an outsider.” For young people who are looking for marriage partners outside their home communities (see below for more discussion), these external membership rights are extremely useful.

In the survey, only 5% indicated that they never visit other longhouses while the majority (40%) visit another longhouse at least twice a month and 7% report that they visit another longhouse more than once a week (Table 419). These visits are generally highly regarded with 82% of the respondents reporting that the visits are either very important or important. Only 13% of the respondents regarded the visits to other longhouses as not very important.

**Table 419 Frequency of visits to other longhouses.**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Frequency</th>
<th>% Of respondents (248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once a year</td>
<td>87</td>
<td>35</td>
</tr>
</tbody>
</table>

Note: Respondents can give more than one answer.
More than twice a year | 33 | 13  
More than once a month | 99 | 40  
More than once a week. | 16 | 7  
Never visit other longhouses | 13 | 5  
Total:  | 248 | 100

The longhouses visited during inter-longhouse visits include all the Murum Penan communities as well as communities located at Sungai Asap resettlement. Other longhouses that were visited included:
- Long Urun
- Lusong Laku
- Long Liko
- Long Geng
- Long Tanyit

The main reasons given for inter-longhouse visits correspond to social or family activities (78%) and celebrations during festivals such as Christmas (64%). A much smaller proportion (18%) reported that they made visits to borrow money, food and clothes. Travelling to other longhouses for the sale or exchange of items or for working or meeting was cited by less than 10% of the respondents indicating that this was not an important driver for travel. Travel for work was only mentioned by 3% of the respondents indicating the low levels of employment in the communities (Table 420).

Table 420 Rationale for visiting another longhouse.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
<th>% Of respondents (248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social (visit family)</td>
<td>193</td>
<td>78</td>
</tr>
<tr>
<td>Ceremony (Christmas or Gawai)</td>
<td>158</td>
<td>64</td>
</tr>
<tr>
<td>To borrow cash, food, clothes.</td>
<td>44</td>
<td>18</td>
</tr>
<tr>
<td>To sell food or other items.</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>To exchange items</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Attending meetings, planting</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Working</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Respondents can give more than one answer.

Trips are normally undertaken with more than one person (77%) with only a small proportion of journeys (8%) involving solo travellers. The length of time spent during journeys to another longhouse varies with 41% of the respondents indicating that visits last from two days to a week. Day trips account for only 19% of the journeys taken and 30% of the respondents claim that inter-longhouse journeys involve an overnight stay. Longer trips are not common with only 5% of the respondents reporting journeys lasting between one week and one month.

With much of the area opened for logging, roads connect many of the longhouses and this has become main method of travel. The majority of the respondents (63%) rely on getting transport the logging trucks that passed along their longhouses. Some longhouses are still only accessible by river, and for these boat transport is used. To reach these communities 45% of the respondents reported that they used boats. Two longhouses, Long Luar and Long Tangau, are situated next to each other and travel
between these two communities is generally accomplished by walking (28% of respondents). Thus, travel times between the longhouses can vary from 10 minutes for the adjacent communities to a full day (as in the case of Long Malim to Long Jek) depending on the mode of travelling and distance (Appendix Five).

4.6.3 Visits to townships

Visits to the township are usually done for purpose of shopping, dealing with government services, and seeking medical consultation and treatment in the hospital and clinics. The four main townships for the Murum communities are currently: Kapit (the Kapit Divisional headquarters), Belaga (the District headquarters), Sungai Asap (administrative sub-district and service centre) and Bintulu (Bintulu Divisional headquarters and the largest urban centre in the Murum area). Of the four townships, Sungai Asap is the most frequented largely due to its proximity to the Penan longhouses. The least visited township, in spite of it being the Divisional headquarters, is Kapit (Table 421). The distance and the expense required to reach Kapit prevent travel to this administrative centre. After Sungai Asap, the most often visited town is Bintulu, rather than Belaga, which is the District headquarters for the Penan. Access to Bintulu is via good road transport, whereas the road to Belaga is hazardous. The easiest way to reach Belaga is via the express boat from Bakun. The results of the survey show that Penan now regard visiting the township as more important than visiting neighbouring longhouses due to the availability of essential medical and administrative services at the townships.

Table 421 Main townships and frequency of visits.

<table>
<thead>
<tr>
<th>Frequency visiting:</th>
<th>Belaga</th>
<th>Kapit</th>
<th>Sungai Asap</th>
<th>Bintulu</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once a year</td>
<td>30 (12%)</td>
<td>8 (3%)</td>
<td>75 (30%)</td>
<td>64 (26%)</td>
</tr>
<tr>
<td>More than twice a year</td>
<td>6 (2%)</td>
<td>0</td>
<td>36 (15%)</td>
<td>16 (7%)</td>
</tr>
<tr>
<td>More than once a month</td>
<td>6 (2%)</td>
<td>0</td>
<td>115 (46%)</td>
<td>19 (8%)</td>
</tr>
<tr>
<td>More than once a week</td>
<td>6 (2%)</td>
<td>0</td>
<td>8 (3%)</td>
<td>0</td>
</tr>
<tr>
<td>DNA*</td>
<td>205 (83%)</td>
<td>240 (97%)</td>
<td>14 (6%)</td>
<td>149 (60%)</td>
</tr>
<tr>
<td>DNA</td>
<td>248 (100%)</td>
<td>248 (100%)</td>
<td>248 (100%)</td>
<td>248 (100%)</td>
</tr>
</tbody>
</table>

* DNA – no answer

Purchase of food materials or other items was the main reason given for visiting the township. The second most important reason given by the respondents is for visiting government offices or the clinic. Other rationale for visiting the townships included sending or visiting children in school, visiting family, for employment and for exchanging items (trading) (Table 422). These trips are seen as important by most of the respondents (90%) with only a very small number (8%) of respondents of the opinion that the trips are not very important.

Table 422 Reasons for visiting a township.

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency</th>
<th>% Of total respondents (248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To buy food or to sell food or other items.</td>
<td>186</td>
<td>75</td>
</tr>
<tr>
<td>Others; government office, clinic</td>
<td>161</td>
<td>65</td>
</tr>
<tr>
<td>School</td>
<td>32</td>
<td>13</td>
</tr>
<tr>
<td>Social (visit family)</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Employment</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>
As with travel between longhouses the majority of the respondents (82%) indicated that visits to the townships were made with more than one person. Only a smaller proportion of the respondents (8%) reported that only one person (generally the head of the household) would travel alone. However, unlike the longhouse visits, the majority of travel to the townships is done as either a day trip (48%) or an overnight (38%). Only a small proportion of the respondents indicated that they stayed in a township for more than an overnight (11%).

Travel to the townships depends very much on using the roads and road transport. As such the majority of respondents (82%) rely on getting rides with vehicles from the timber companies to travel between their longhouses and township. As there is only one private vehicle in the eight communities, travel to town is not only time consuming, but often uncertain. The travel time alone to reach the nearest township of Sungai Asap ranges from one hour for the communities to Long Jek and Long Peran to close to six hours for Long Malim. Other modes of travelling included by boat (12%), private car (11%), and walking (9%).

### 4.6.4 Visits to plantations and logging camps

There are a number of logging camps located in the Murum area with most situated relatively near the various Penan longhouses. Many of the longhouse residents go to the logging camps to trade or sell forest produce and to buy food items from the canteen. According to those interviewed, they visit the logging camps more than once a month or at least once a month. For most, the purpose of visiting logging camp or oil palm plantation is to buy food and / or to sell food items (collected from the forest). For the respective headmen of the longhouses and committee members, they also go to the logging camps to collect the monthly allowances provided by the companies (Table 423).

#### Table 423 Murum Penan rationales for visiting plantations and logging camps.

<table>
<thead>
<tr>
<th>Rationale</th>
<th>Frequency</th>
<th>% Total respondents (248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To buy food or to sell produce.</td>
<td>124 (48%)</td>
<td>50</td>
</tr>
<tr>
<td>Employment</td>
<td>23 (9%)</td>
<td>9</td>
</tr>
<tr>
<td>Collect monthly allowance</td>
<td>10 (4%)</td>
<td>4</td>
</tr>
<tr>
<td>Social (visit family)</td>
<td>5 (2%)</td>
<td>2</td>
</tr>
<tr>
<td>Just visit</td>
<td>2 (1%)</td>
<td>1</td>
</tr>
<tr>
<td>To exchange item (state the item)</td>
<td>1 (&lt;1%)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>School</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Respondents can give more than one answer.

Visits to the logging camps and the plantations have a somewhat different format in that in general only the head of the household makes the visit (31%) or in small parties (28%). The trip to the logging camp is not considered as a family outing with only 3% indicating that the whole family would visit. Visits to the camps are generally to buy food items and household needs and these trips normally coincide with their monthly visit to receive their allowance.

The visits to the camps are generally day trips (46%) with only 11% of the respondents reporting that they would stay overnight. To reach the camp the respondents generally used the logging roads and relied on getting lifts from passing
vehicles (48%). Due to the cost involved, only a very small number of respondents (1%) charter private cars through special arrangements for transport. These visits are seen as important by most as the camps are a source of income and also provide some services that would otherwise require a longer trip to Sungai Asap.

4.6.5 Other or previous places of residence

As the information on place of birth has demonstrated, the Murum Penan tend to remain in their home communities (Table 413). Only a relatively small proportion of the population currently resides or has in the past resided outside their home communities. As outlined in Table 424 close to 90% of the residents have never lived anywhere other than their respective communities. The reason given for those who have resided outside the community are:

- Working outside their longhouses,
- Following spouses (e.g. husbands who work in Bintulu and Sibu respectively); and
- Attending school.

Overall, the numbers living away from their home communities are small. The largest numbers are those from Long Wat living at Sungai Asap to care for their children attending school. Through inter-longhouse marriages there are also movements between communities according to local marriage custom. This appears to be mainly the case for the communities of Long Tangau and Long Luar. There are a number of Penan married to non-Penan who work away from the community and they only occasionally return to the longhouse (approximately once a year). Others who are employed tend to live where their work is located.

Table 424 Other or previous places of residence for the Murum Penan (> 1year).

<table>
<thead>
<tr>
<th>Previous places of residence</th>
<th>Freq.</th>
<th>% Of population (1531)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never have lived in another place</td>
<td>1337</td>
<td>87.3</td>
</tr>
<tr>
<td>Total who lived in other places (&gt; 1 year).</td>
<td>194</td>
<td>12.7</td>
</tr>
<tr>
<td>Total:</td>
<td>1531</td>
<td>100</td>
</tr>
</tbody>
</table>

4.6.6 Short and long-term absentees (from the community)

In general, there are very few long-term absentees from any of the Murum communities. The main notable absentees are the residents of Long Wat who are parents of schoolchildren boarded in the primary schools in Sungai Asap. They have made their temporary residence at Uma Nyaving, an annex of a Kayan longhouse. They return to their own apartments at Long Wat during the school holidays or when there are important occasions such as visits by officials, or attending to family crisis. They all have the intention to return to Long Wat once they are satisfied that their children’s education has been has progressed to a stage where they (the children) can be left on their own. In this, Long Wat is unique, as no other longhouse has gone to this extent to ensure their children receive education.

Apart from Long Wat, the 14 residents who were absent from their apartments, almost all the residents of all the longhouses were present during the survey work. Those absentees were those men who were away working in Sibu, in an estate nearby or other places. There were other cases of short-term absentee who were away caring for sick relatives in other communities.

Thus, the commonly held perception of the Penan as “roaming about and often absent from their villages” does not generally apply to the Murum Penan.
4.7 Changes and predictions in population composition and stability

With the advent of logging and plantations in the Murum area, there has been a corresponding influx of workers from other areas. These changes are beginning to have an impact on the ethnic composition of the Penan communities as marriages between non-Penan workers and local Penan occur. The data collected during the ethnography survey revealed that there were 45 persons of different ethnic groups married to members of the Murum Penan communities (13 Iban, 9 Kenyah, 6 Indonesians, 3 Chinese, 1 Kayan, 1 Lun Bawang, and 8 Penan of other areas). The only community that has not had an “outsider” marrying one of the local women is Long Peran. During discussions at Long Peran, it was mentioned that they in fact preferred to have their women married locally. This sentiment was echoed in other communities as well. The main concern is that when the women marry outsiders, they leave the community to follow their husband’s family. There are few cases of men marrying Penan women and staying in the community. The general fear is that these inter-marriages could eventually lead to the dispersion of the Penan families outside the Penan longhouse communities. The non-Penan spouses prefer to bring up their families in centres outside Murum having better facilities for schooling and services.

4.8 Parenting and Household Division of Labour

4.8.1 Children and Gender Roles

The two main Penan categories of relevance are anak and danak. Anak generally refers to children below the age of puberty. Danak (adolescents) refers to those old enough to initiate romance, sex, and marriage, i.e. in the Penan context, from the ages of around 13 onwards.

Using the above definitions, there are a total 560 anak in the eight communities (449 for the six dam-affected communities) or almost 37% of the overall population.

As Table 425 shows, children are found in 65% of households with the highest percentage in Long Wat and the lowest in Long Luar. This means that over 65% of Penan households are young and will experience many developmental changes in the coming years. While reliable data on child-caregiver relationships is not available for all the communities, the confirmed data from Long Wat and Long Malim shows that parents (birth or adoptive) cared for the majority of children. In 16% of the cases children live with their grandparents, who sometimes assume the role of adoptive parents. There are obvious implications for caregivers’ freedom of movement, especially the mothers.

Childcare concerns three-quarters of community households in the most intimate way. By and large, Penan households are young and therefore will experience many developmental changes in the coming years.

Table 425. Households with children aged 13 and under

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13 Newborn infants are called anak bale. A very young child may also be called anak mujen. This is a descriptive term, mujen being the word for “lacking in skills and control” such as is characteristic of toddlers.

14 In addition, six women at Long Wat were pregnant on my most recent visit in mid-December.

15 In anthropology, the household developmental cycle refers to changes in the composition of households over time, as couples marry and have children, and eventually, when all the children have grown and formed their own households, become “childless couples” again. Penan households frequently do not make the “full” cycle typical of nuclear families, as people often adopt or foster children (including their own grandchildren) late into their lives. Penghulu Pao Tului is an example: his current household includes three adoptive children and three adoptive grandchildren.
<table>
<thead>
<tr>
<th>Community</th>
<th>Total households</th>
<th>Households with children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Jek</td>
<td>49</td>
<td>32 (65.31%)</td>
</tr>
<tr>
<td>Long Peran</td>
<td>34</td>
<td>24 (70.59%)</td>
</tr>
<tr>
<td>Long Luar</td>
<td>52</td>
<td>28 (53.85%)</td>
</tr>
<tr>
<td>Long Pelutan</td>
<td>39</td>
<td>24 (61.54%)</td>
</tr>
<tr>
<td>Long Singu</td>
<td>64</td>
<td>42 (65.63%)</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>28</td>
<td>17 (60.71%)</td>
</tr>
<tr>
<td>Long Malim</td>
<td>46</td>
<td>30 (65.22%)</td>
</tr>
<tr>
<td>Long Wat</td>
<td>83</td>
<td>62 (74.70%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>395</strong></td>
<td><strong>260 (65.82%)</strong></td>
</tr>
<tr>
<td><strong>Dam-affected communities only</strong></td>
<td><strong>312</strong></td>
<td><strong>204 (65.38%)</strong></td>
</tr>
</tbody>
</table>

Children are mostly a physical burden in their early years. Frequently, people commented how women’s freedom to undertake certain kinds of activities (especially that require travel out of the longhouses) is constrained by childcare. Observations and discussions suggest that overall it is the women who spend the most time with young children. Not only because the children need to nurse but also the fathers spend more time outside the community. On the other hand, childcare is only a “burden” from my outsider’s perspective. Children are well loved and, generally, wanted (SESCO 1994:34). Women have not described childcare as a “burden” and they generally report that husbands will look after the children if they (the women) are busy. Penan men are indeed affectionate with their children. However, as one woman commented, getting men to do things for them is not always easy, and delegating childcare responsibilities can be a source of domestic conflict. As children grow, they become valuable helpers to their parents, especially the girls (details below).

In terms of gender roles, Brosius observed twenty years ago: “women almost never go into the forest alone, and only rarely with other women. Even then, they do not travel very far. Women do go into the forest in the process of moves from one camp to another, on the way to sago processing sites, and they occasionally accompany husbands on hunting trips. But never did I witness a woman going into the forest alone, and on only a few occasions did I ever witness women going into the forest with other women” (Brosius, 1992). Current observations suggest that this pattern of behaviour has changed a great deal. While it is still the men who travel the most, women commonly do go out to garden (in the fields), fish, and collect products from the forest, without men at their side. One woman even claimed that she has travelled as far as Belaga on her own, and I have observed and heard about women-only groups out fishing, tending to garden crops, or visiting Asap.

But unlike, for example the Batek of Pahang (Lye 1997; 2008), Penan women with young children do not habitually take children along when they go out to work in the forest. The Batek carry their babies wherever they go and encourage children to walk by themselves as soon as they can. The Batek women prefer being out in the forest to sitting “at home.” For Penan, it appears that women busy with childcare most

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16 For future studies, it might be worth examining whether this shift in gender roles is related to resource decline. In the abundant times of the 1980s, women's contribution to the food supply was not as urgent as it is today. Now, there are lower yields per effort in the mainstay activities of hunting and fishing. Many days go by without a single bountiful harvest. If the women don't collect vegetables or fish on their own, their families have nothing to eat.
commonly just remain at home with the children.\textsuperscript{17} If their husbands are home, the wives may delegate childcare to them and take the opportunity to work on their own. Women are freest before marriage, and again in later life, i.e. from the time when their youngest children are approaching puberty.

The implication for the immediate future is that any work opportunities for younger women necessarily need to be home-based. Women have to multi-task. A good example of appropriate work is the weaving of baskets and mats, which Penan women historically have specialized in: "Women play a key role in the production of mats and baskets for trade. In fact their role is absolutely central" (Brosius 1987:119). The work of processing rattan (splitting and stripping the lengths, shaving them down to the necessary fineness, and drying them) as well as the actual weaving is done in the vicinity of the apartment or out on the verandah (see Chapter 2). The women can keep an eye (and ear) out for the children while they are working, thus combining childcare with income generation (Figure 44).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig44.jpg}
\caption{Home-based activities allow women to look after children while generating income.}
\end{figure}

\subsection*{4.8.2 Childcare Responsibilities}
Mothers are the primary caregivers in early childhood. Babies are breastfed on demand, perhaps for two or three years, or until the next child is born. Fathers and mothers are equally affectionate with the children, cradling and kissing them often. Once babies can crawl and walk, they need constant supervision. Anyone in the vicinity will keep an eye on the children, but the primary responsibility remains the designated caregiver. Babies at this stage are a source of much collective enjoyment, as people (children and adults) play with them and encourage them to walk and talk. Later, babies may become especially attached to fathers, and demand to be held whenever the fathers are home.

From about the age of around four years, children are fully immersed in their own social networks and are often seen running from one apartment to another, seeking out their playmates. There appears to be no gender differentiation before this period;

\textsuperscript{17} This point can only be demonstrated with precise time-allocation data, which the briefness of the fieldwork precludes doing. I'm therefore only reporting a general impression.
boys and girls are treated alike. (However, a common style of scolding naughty boys - to threaten to amputate their penises - could promote early awareness of gender distinctions.)

Once they reach the age of seven or so, parents seem to relax their vigilance and no one specifically “looks after” a child in the literal sense of the term. A girl may (through imitation) begin to play at household tasks or join the women on fishing and collecting expeditions. Boys and girls may play separately or together. They may alternate their times between playmates and caregivers. We do not have quantitative data to detect how children are nudged towards their expected gender roles at this stage.

Until the ages of eight or nine, children remain primarily near the longhouse. Their parents may send them here and there on errands, and they may follow their parents out, but they themselves do not really wander far.

The primary childcare responsibility thus remains with the mothers, who are at home much more than the fathers (Figure 45). Boys who are especially attached will follow the fathers/grandfathers wherever they go.

Around the ages of ten or so, children may have become quite proficient at using the boats. In Long Luar / Long Tangau, for example, we observed both boys and girls paddling up and down the rivers either for play (armed with miniature versions of hunting equipment) or seriously collecting foodstuffs from the forest. Sometimes they may bring younger siblings with them. Men at Long Wat recalled that they began their first independent hunting forays at around this age. However, from our limited experience, boys are most often observed travelling out of the community with their fathers, going shopping, visiting, working for money, or running errands for others, and less often engaged in direct food-gathering or contributing to the household supply.

Figure 45 Women have the primary responsibility for childcare.

By the time they enter their adolescence, the gender division is well marked. Girls increasingly assume the burden of household maintenance, while boys spend a lot of time with older boys or male relatives. Young girls may help out in the home according to whim and fancy; older girls are less free. They are sometimes fully engaged in food preparation, cooking, cleaning, washing, and looking after young relatives (siblings, nieces and nephews). This is especially evident in large families, where their mothers depend heavily on them to run the household.
As skills improve on the river and in the forest, children become more independent of their parents. With adolescence comes the capacity to initiate sexual relations and marriage. Brosius (1992) observed that:

“At the age of about 15 boys begin more actively to seek relationships, both in their own communities and elsewhere. One of the asymmetries in Penan gender roles is that post-adolescent girls normally do not travel to other communities, while this is expected of boys. Boys participate enthusiastically in visits to other communities, with the specific intent of courting girls.”

During the field observations, it was noted that this asymmetrical pattern appears to have changed. For example, young women from Long Tangau were seen at Long Wat and there was mention about the visits of young Long Wat women travelling solo to visit relatives in Long Jek and Long Malim. These instances were reported without comment, (i.e., as an entirely natural, rather than scandalous state of affairs).

When both parents are busy or engaged elsewhere, it is most often a daughter who helps with childcare, or grandparents, especially grandmothers. Thus:

- Primary caregivers: mothers, and then fathers.
- Secondary caregivers: older siblings (especially sisters) or grandparents (especially grandmothers).
- Tertiary caregivers: aunts and uncles

Table 426 outlines the primary caregivers for children of different age classes.

Table 426. Who looks after the children; primary caregivers

<table>
<thead>
<tr>
<th>Age group</th>
<th>General</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2</td>
<td>Mothers</td>
<td>Mothers</td>
<td>Mothers</td>
</tr>
<tr>
<td>3–5</td>
<td>Mothers</td>
<td>Mothers</td>
<td>Mothers</td>
</tr>
<tr>
<td>6–11</td>
<td>None specific</td>
<td>None specific</td>
<td>None specific</td>
</tr>
<tr>
<td>&gt;12</td>
<td>None specific</td>
<td>None specific</td>
<td>None specific</td>
</tr>
</tbody>
</table>

Looking after children, in this and other societies, involves a delicate negotiation between men and women, young and old. Gender roles in Penan society are likely to be less rigid than they were before. Some roles are not interchangeable (for example, there are no women who specialize in hunting or blacksmithing, just as there are no men who specialize in weaving). Childcare is a mixed area. The constraints of nursing automatically guarantee that mothers have the most physical contact with babies. But beyond that constraint the fathers’ involvement in childcare also starts very early. Overall, the responsibilities for children do seem to be transferable, with “all hands on deck” brought in to look after children as needed. The overall impression is that Penan children are rarely neglected, and when they are others will step in. However, much depends on everything else being equal. For example, if one gender specializes in one domain of activity, there will be implications for its capacity to contribute in other areas. If men are away all the time, they cannot help out with the children. Similarly, a woman who is busy with children has limited work options. Under conditions of economic stress, if both husbands and wives are engaged in income-generation activities, then they need ongoing access to a supportive network of relatives to help out with childcare. This network is a form of social capital that women can draw on, to enable them to do what they couldn’t do on their own.
4.8.3 Adoption

Adoption should be considered as integral to Penan society. Brosius noted that “Virtually every Penan has at least one child, and usually more, with which it has an adoptive relationship” (1987:49). Whether the figures today are as high as in 1987 is subject to query, but as shown in Table 427 some 6% of children in Long Malim and 15% in Long Wat are living with adoptive parents; this figure is close to 19% if those living with grandparents (who often have an adoptive-like bond with the children under their care) are included. These numbers are likely to be under-estimates, as there appear to be more cases of adoption than there is fieldwork time to record. Adoption is “personal to the individual doing the adopting, not to a couple, and both men and women may adopt” (SESCO 1994:34–35). Even a child (beyond the age of ten or so) may choose to adopt another child. In one case, the adoptive “mother” is about 21 and her adoptive “son” is about 15 or 16 years old. It was initiated because the boy was strongly attached to this older “playmate” as a small child and they decided to perpetuate the link through an adoption.

Some examples of adoptions:

- Two children (from separate families) were taken into their grandfather’s care following the deaths of one of their parents.
- A baby was co-adopted by her aunt and uncle (brother and sister of the birth father).
- Several siblings and their parents co-adopted a baby following neglect by the baby’s original (first) adoptive mother.
- In other cases, grandparents “adopted” grandchildren as their own: as they explained it to me, adoption allows grandparents to maintain continuous contact with the children.

Table 427. Children and their household conditions: Lg Wat and Lg Malim

<table>
<thead>
<tr>
<th></th>
<th>Households with children</th>
<th>Total numbers of children</th>
<th>Living in the households of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Birth parents</td>
<td>Adopted parents</td>
<td>Grandparents</td>
</tr>
<tr>
<td>Lg Wat</td>
<td>57 (76%)</td>
<td>126</td>
<td>91 (72.2%)</td>
</tr>
<tr>
<td>Lg Malim</td>
<td>35 (76.1%)</td>
<td>85</td>
<td>80 (94.1%)</td>
</tr>
<tr>
<td>Totals</td>
<td>92 (76%)</td>
<td>211</td>
<td>171 (81.1%)</td>
</tr>
</tbody>
</table>

Adoption thus has both a practical role—to care for orphaned or neglected children—and an affective basis—to maintain continuous contact with well-loved children from other families. Childlessness is another reason for adoption. In some social networks, most clearly in Long Wat there appears to be a high degree of infertility. It was found, for example that the number of unambiguously adopted children at Long Wat is four times more than Long Malim (the proportion is over 300% if adult adoptees are included). As the Penan pointed out, some Long Wat families have few children, or none at all. In one sibling set, for example, there were five sisters and one brother, and only one child ever resulted from their various marriages. Adopted children are, however, plentiful for this sibling set. There is possibly a genetic basis for the infertility, but the trends for these have not been quantified.

As Brosius (ibid) pointed out (and as volunteered by the Penan informants), adoption has implications for other aspects of social life. For one thing, adoptive relationships constrain the choice of marriage partners: children who grew up in the same household, sharing one or two parents in common, even if they have no genetic
relationship between them, are considered siblings and therefore not allowed to marry each other. When a young Penan looks out at the pool of eligible marriage partners, he must exclude not just his biological siblings and his parents’ and grandparents’ siblings, but any step- and adoptive siblings in all generations. In small communities that prefer endogamous marriages, this can become a serious problem. Socially, “a community is linked together by a series of adoptive relations that involve not only the child and the person adopting, but between the person adopting and the biological parents of the child” (SESCO 1994:34–35). Adoption initiates an exchange relationship that entitles the birth parent to make economic demands on the adoptive parent, perhaps indefinitely. This will certainly have ramifications if some families (child-takers) acquire wealth and others (child-givers) do not.
5 COMMUNITY HIERARCHY, GOVERNANCE AND DECISION MAKING

5.1 Community leadership

Most hunter-gatherer societies are highly egalitarian and lack any concept of formal leadership (Langub, 2004). The Western Penan however, have a strong institution of leadership with some individual headmen being credited with the status of maren or aristocrat. The topic of leadership has also been discussed thoroughly by Brosius (1987, 1992), Khoo (SESCO 1994).

While kinship is important, becoming the Headman by descent, where the position passes from father to son following aristocratic (maren) lines, seems to be giving way to becoming headman by merit. At least, this is what people in Long Wat and Long Singu have argued. According to them, the position should go to whoever can do it rather than following an assumed line. Their main concern is whether the son of a headman is suitable to assume the responsibility of leadership.

Suitability in this case refers in part to the qualities expected of a headman. These range from having the appropriate maturity in age as well as the knowledge and wisdom to guide the community. The knowledge aspect also covers knowledge of the history and traditions of the Penan as well as the connections with the other communities. Formerly a detailed genealogical knowledge was deemed important. This knowledge is important as the headman is expected to be able to arbitrate disputes and mediate during discussions.

The role and expectations of the headmen in Penan society is obviously changing. Where once the headman was expected to be someone who could coordinate the hunting, gathering and moving activities that ensure the community survival in the forest, he now has to take on different, more bureaucratic roles. The Headmen (Tua Rumah or Tua Kampong) are now expected to be able to deal with the outside world, particularly with government and the companies that now surround the communities. Penan frequently mention being able to communicate in the language of the outside world, read, and write as an important qualification. When visitors come, headmen should know how to host. Within the community, headmen should be helpful to those in need.

Communication skills are not limited to dealing with those outside the community. The headmen should also be able to get people organized to work for the good of the community: in other words, have the skill to mobilize community labour such as for agriculture. Thus, the role of headman is a job that requires knowledge of strategy and motivation. In Penan culture, strategy and motivation necessarily involve oratory (see below). One headman talked about verbal skill. Penan have a rich set of discourses: different kinds of pia’ (speech) for different strategic purposes. A headman must know how to persuade people using different registers of speech. When his people continue to be disobedient, then he has to step up the register but still remain within the bounds of politeness and respect. He must be careful not to cause insult (munyi). For example, one community leader in Long Wat is too blunt and direct: he seems to have no skill for strategic retreats and is said to have caused munyi, which breeds lingering resentment.

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18 This term has been “borrowed” from their much more highly stratified neighbours, the Kayan.

19 It is entirely possible that the people who argued this had sons of specific headmen in mind. In this, people are not challenging the principle (leadership by descent) as much as they are reacting against specific characters.
Finally, there is the extensive domain of *adet*: the classical Penan headman has to have a deep knowledge of *adet* and be able to arbitrate and make juridical decisions. Brosius (1987) discussed knowledge of genealogies as a significant characteristic of headmen. This is unlikely to be a factor nowadays as it was never mentioned as one of the criteria during discussions for the present survey. Genealogical knowledge, which is used in claims to land and arbitrate among groups, has sharply declined among Penan overall and now appears to be limited to a handful of older men. It is still used as a strategic tool, but may be more prone to creative editing.

Some of this leadership is manifest in the morning “discussions” or “broadcasts” (for lack of better words) on the verandah. These discussions or public addresses are ritualized forms of speech, rather like “a monologue addressed to everyone and no-one at once” (Brosius 1987:37). These monologues vary in emotive content, sometimes expressing genuine exasperation and anger, are uttered in voices loud enough to be heard throughout the community, and allow people to air grievances, counsel the community, make announcements, or start an impromptu general discussion.

It is difficult to put a finger on the precise chemistry involved, but there seems to be something like a level of social bonding that allows the community to develop shared interests and objectives, and mobilize the resources to achieve those objectives even without the leadership of a popularly elected headman.

While the institution of leadership among the Western Penan may be strong there are signs that the foundations of this leadership may be eroding. With the arrival of logging companies in the 1980’s, many of the headmen negotiated with the companies for allowances and cash compensation for lost forest resources. These actions were not always well received by the communities who viewed the resources as communal and felt that payments belonged to everyone, not just the headman. Where the communities were able to divert payments from their leaders to the community as a whole, they have undermined the somewhat shaky foundations of Penan headmanship (Langub, 2004).

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20 In October and November in Long Wat, the topic most frequently discussed (at times quarreled over) on the verandah was the theft of valuable durians from individual orchards.

21 Generally, people are, indeed, proud that they have managed to organize themselves without help from their titular headman.
6 COMMUNITY TERRITORIES AND RIGHTS

6.1 Tenure and Territory

General information on Penan concepts of the land, tenure, and territory can be found in works by Brosius (1987, 1992 & 2001), Langub (2004), and Khoo (SESCO 1994) and is applicable to all communities. What is important to note is that Penan have a strong sense of bonding with their territory. The latter is called tana’ pengurip (tana’ = land, forest, all the world; pengurip: from urip = life; literally, then, ‘lifeworld’).

As one of the earliest occupants of this country and intimately tied to the landscape, the Penan feel insulted when told they have no native customary rights to land, because their ancestors did not cut the forest to create such rights; that they are mere squatters on the land. The Penan ancestors did not cut the forest to create rights because it was not their adet to do so, it was their adet to leave trails connecting ancestral burial sites, old camp sites and to resources such as birai uvud (sago groves), birai wai or birai laka (rattan stands), kayeu tanyit (honey trees), tajem (trees that supply the poison for darts) that they molong in various parts of their tana’ pengurip.

Every community has a specific area that it “belongs” to, and over which it has recognized rights of ownership and use (Brosius 1987:34). The basis for historical claims to land is ancestry and genealogy, which is intimately related to a group’s migration and habitation histories. As Brosius (1986) eloquently recorded, Penan history is written in the landscape. Where an ancestor walked, that is the basis for claims to land. It is even stronger when a known ancestor has left traces (uban) on the land: a sago grove here, an old encampment there, a burial site, and pathways and trails everywhere. These are the sites of a collective social memory; recorded in placenames and communicated through stories. They are the evidence that the ancestors walked and worked the land and have left it (the land) behind for them to use.

The landscape is well walked and well worked over and people know not only where their claims to the land are, but also the locations of the land of others there. This is truly local knowledge of a depth and breadth that is impossible for outsiders (to the Penan) to master. As they travel up and down the river, they monitor the conditions of their lands and resources and are acutely aware which ones they have the right to harvest and which ones they cannot.23 There is also a communicative element to all of this, with people monitoring other people’s resources and informing them of new developments (along the lines of “your durians are ready for harvest”). In other words, the landscape is also integral to the give-and-take of social life.

While the Western Penan did not claim land in the manner of the other tribes (i.e. by felling forest for planting rice) they are nonetheless acutely aware of the extent of the area that they and their ancestors have exploited over the years. The scope of this territory is identified through detailed knowledge of the landscape, the names of the features and the events and resources linked to these geographical points. Figure 61 outlines the general territories recognised by the various Western Penan communities.

Rivers are an important reference point for the Penan and they have a vast and detailed knowledge of the rivers in their territories. As Brosius (2001) has outlined in much detail, the Penan frequently speak of their territories with reference to the watersheds they exploit. Indeed, the rivers provide the main points of reference for

22 Tradition or custom.

23 During surveys of the river, there were often unscheduled stops for fruit and vegetable harvesting. It is common practice to always be on the lookout for anything useful or edible.
navigation in forested areas where there is no line of sight and the Penan are always acutely aware of their location relative to the various rivers in the territory. However, more than this, rivers are the central feature in the landscape around which their spatial, historical and genealogical information is organised. Through the naming rivers, the Penan give meaning to a place as it relates to their history, life and survival. Rivers are named for ecological and geographical features as well as for the occurrence of particular fruits or trees of importance to them. The rivers may be named after a particular feature of the landscape or a memorable event. Rivers are also named for individuals (both living and dead) or events that occurred during their life. Thus, rivers (and the Penan history associated with them) serve as a link between the Penan and the landscape establishing the rights of communities to exploit resources of a certain areas.

While immensely important, the rivers are just one part of the landscape that also includes other physical features such as mountain peaks, ridges, cols, steep portions of trails, resting places along major trails, cliffs rock faces and many more. Tying this network of rivers and place names together is a vast network of trails.

In the past we Penan led a nomadic life, moving from one place to another within particular river systems or area. In our migration, each band would leave traces of occupation through old campsites (la lamin). The area encompassing these old campsites has boundaries with areas of other bands.

We call the area that we occupy tana' pengurip, that is, the area that provides us our livelihood. In the tana' pengurip we molong (conserve for the future) wild sago, rattan, fruit trees, ketipe (wild rubber), various species of trees that are useful to us such as tajem trees that produce poison for our blowpipe darts, gaharu, trees to make blowpipes, build boats and houses, for coffins, and other uses.

In the tana' pengurip we leave old campsites as we migrate. Since the time of our ancestors, we have created numerous old campsites called la lamin. In these old campsites are found various fruit trees that our ancestors ate. These are traces of our life journey and evidence of our occupation and rights of access to the area and resources therein. As the tana' pengurip was first created by our ancestors, and we the descendants are the inheritors, we call this land tana' ukun tepun (land of our great grandfathers) or tana' puu' (ancestral land) or tana' asen (customary rights land). This is how we Penan create rights to land according to our adet (custom).

In our past constant migration from one place to another, we used resources sustainably, avoiding wastage. After we settled down, part of our tana' pengurip have been cultivated, and the other part conserved to cater for the needs of future generations, our children and children's children.

(Interview with Penghulu Pau Tului, April 25, 2010)
Figure 61 Territorial ranges of the Western Penan communities.
The general territories of the Murum Penan correspond to the watersheds in which these communities have lived, moved and existed during the past 200 years. On a more local basis, each community relies on the forest surrounding them for their day-to-day needs. This “home range” of forest is the area that provides forest products that the communities depend upon and is the forest area that is regularly used by the community. To estimate the extent of this land, the outer “borders” were estimated based on the area located within no more than half a day’s walk from the community. This area corresponded land located within a perimeter of approximately 3km beyond the marked land use (the area generally indicated by the community fruit trees and rice fields) and situated below 600m above sea level (for purpose of this estimation topography was included as a limitation). This “home range” area thus includes their current farmland and provides an estimate of the amount of forest each community depends on for their day-to-day needs. The results of the forest requirement for each community were estimated as follows:

- Long Wat  4,540 ha
- Long Malim  4,030 ha
- The Plieran communities (Long Singu, Long Luar, Long Pelutan, Long Tangau)  16,370 ha

For the Penan, the land and the landscape constitutes a sort of collective cultural investment in the future. This Penan homeland or tana pengurip is the land that was established by their ancestors and continues to provide a link to their genealogy and past. There is thus a community responsibility for the land, as it is a fundamental part of maintaining the links to their history and their past. For this reason, the discussion about compensation has become an important ingredient of all negotiations with concessionaires and currently with authorities over the Murum Dam. When Penan think of compensation, it is for replacement of their natural capital, which they had not objectively valued. They know that in fact, the land represents their lives and collective histories, and its value is ultimately incalculable. They also know that they will now lose most of this land when the dam is impounded. Compensation figures represent a currency that allows them to translate their feelings for the land—its incalculable loss and the opportunity cost of the dam—into ringgit-and-sen talk that can be understood by the authorities.

6.2 Relations between communities

Traditionally within the Penan communities, the groups may freely move through another’s territory and use the resources there (permission is tacitly or explicitly given). This is the case so long as the resources are plentiful and historical relations between the groups are friendly. Thus, the shared boundary between communities (e.g. between Long Wat and Long Malim along the Danum) is more notional than actual or physical. The idea of a distinct boundary has arisen only because there is a need to divide the land for compensation claims.

6.3 Territory and outside groups

With outside groups, the rules of use are more formal. Outsiders should not move into a place and extract resources without permission. A common pattern is for longhouse men from other areas to hunt in Penan territory; but they may not do so without asking for permission and giving a share to the locals. While this is expected, it is often not elaborated or expressed and encroachment is common.

The debate over boundaries is perhaps the result of a shortsighted view of history. For example, the community of Long Malim has always been based on the upper Danum River. However, in recent decades, they appear to have followed an oscillatory pattern moving between the Tegulang and the upper Danum Rivers (SESCO 1994:8–9). These were less migratory moves than extended foraging expeditions in search of better economic prospects elsewhere, and as they recall, they always returned to the upper Danum where they have their deepest territorial
bonds. Similarly, although Long Wat as a community has established habitation sites up and down the lower Danum, they have actually moved only about 12 km from where they were 60 years ago. Compare this to modern urbanites that may move 100’s to 1000’s of km between homes of 20 years ago and today.

While the Penan have been resident in the Murum area for generations, they have not established Native Customary Land rights according to the Sarawak Land Code. Until recently, they never saw or had the need to and it was only with the advent of logging and plantation development in the Penan areas that recognition of rights to land has become an issue. The failure to secure native customary land (and more recently to gain recognition for the Penan rights in the areas they have lived for generations) has serious repercussions with respect to current resource use. A situation is also now developing whereby longhouse people from outside the Penan community area have obtained contracts and tenders to exploit resources in the dam construction area (e.g. quarrying sand and stones for construction projects). The Penan are outraged when they discover such examples, as they assert prior claims to the resources. However, in the absence of recognised rights the best they can do is extract promises of a share of the profits. On the matter of licenses and contracts, there is no stated policy for giving first preference to local communities.
7 KINSHIP, MARRIAGE AND RITES OF PASSAGE

7.1 Penan Kinship

Penan kinship is well defined with definite terms indicating the structure of the family unit. Grandparents are differentiated by gender specific terms (Pu’ Lake for grandfather and Pu’ Redu for grandmother). Great-grandparents also have similarly specific terms (Pu’ Jau or Pu’ Ukun).

Uncles (Vi’ Ame) and Aunts (Vi’ Ime) are referred to by different terms but there is no verbal distinction indicating an elder or younger uncle of aunt. Likewise cousins (from uncles and aunts of any age) are all referred to by the same term (Padik or Pesak).

As with uncles and aunts, brothers (Tuken) and sisters (Tadin) are referred to by different terms without distinction of age or place in the family. Nieces and nephews are referred to as Aong without differentiations between the ages of either the uncles and aunts or the nieces and nephews.

Grandsons and granddaughters are referred to as Ayam without distinction of gender or whether from a son or a daughter.

Husbands are referred to as Banen or Lake with a wife referring to her husband as Nagie or Want. Similarly, a husband will call his wife Nagie but the general term for wife is Redu.

7.2 Penan Marriage

The data collected on population show that the Penan have for the most part married within their communities or between adjacent communities. Guiding these marriages are categories of marriageable kin.

Penan men and women can marry any other men or women except for their kin. As outlined in the previous section this means they could not marry brothers, sisters, uncles, aunts and first cousins. Kin are specified as not acceptable for marriage or consequences (busong) would result.

In spite of the small size of the longhouses and these restrictions, formerly men would usually marry women from within their longhouse. This practice is however changing and today it is more common and acceptable for men to marry women from other longhouses. The restrictions on women are less stringent and it does not seem to matter whether a woman marries a man from within the longhouse or from outside. During the surveys, it was noted that some men had married into the longhouse, while in other cases the women had left the village to follow their husbands.

Polygamy is viewed as not a preferable situation, however the decision lies with the first wife whether she allows the husband to take another wife. A women having more than one husband is not preferable.

Previously, the age to marry was at puberty, but this has now changed and the age ranges from 15 to 20 years. Many are getting married around 16 to 17 years of age and there are still some cases of 14 and 15 years marrying. The latter is not preferred as there are often health consequences and lack of maturity.

There are a number of indicators for a couple’s readiness to marry that include the acceptance of the parents and the elders in the community. The couple must have the intention of staying together, the parents must be informed and the elders are also to give their blessing (piak tebare). The previous indicators of readiness were that the girl could do housework and the boy could do adult men’s work. Now, things have become different and the tendency is towards having employment or a means of support.
The men are generally expected to pay something to the parents of the bride and the elders of the community generally decide on this payment. What is given and the quantum depends on the ability of the husband to pay and can consist of goods such as parang, spears, blowpipe, clothing, plates or other crockery.

After marriage, the husband generally lives with the wife’s family, but this is flexible and depends on the situation. Typical of most social systems in Borneo, the Penan likewise lack a uni-lineal descent pattern. Their society can be best described as “cognatic” with ambilineal descent groups. This is based on establishing genealogical connections with ancestors through either the male or female links and not through only one sex. This is frequently based on choice of residence of the newly married couple, which in the Penan case can be either set (Appell, 1976) In the past, following Penan Adet Keliwah, upon marriage the couple would stay with girl’s parents, then go to boy’s until they decide where they wish to stay. This practice was the cause of some tension with both sides vying for the newly wed couple and is now less practiced.

7.3 Rites of Passage

While the Penan kinship names tend to be generic for the living, the names for the dead demonstrate a high regard for the deceased and a conscious effort to remember those who have passed away.

A woman who has lost her first husband would refer to him as Balauk and the second deceased husband would be referred to as Perun. A man would refer to his first deceased wife as Aban, while the second (deceased) wife is referred to as Beluai.

Children are named and remembered in death in detail but with no differentiation in gender. The first deceased son or daughter is referred to as Uyung while the second (deceased) son is referred to as Akem and the daughter as At. Subsequent children who pass away are referred to (in sequence) as: Ketah, Ladi, Larak, Berah, Utan and Lavin.

This naming of the deceased is an important part of Penan culture and so doing links them to the past.
8 PENAN CULTURAL HERITAGE

8.1 Cultural Heritage and Important Sites

As has been outlined, the Penan history is remembered through their surroundings. Their landscape, consisting of forested areas, old settlements, pathways, burial sites, fruit orchards and locations of past events provide a living documentation of their existence in the Murum area. While many have become Christians, they still revere a number of sites that are sacred to them. These sites are significant natural features in the terrain and provide the Penan with a connection to the spiritual world. Some of the more important sites and their significance are outlined in the following sections. A complete compilation of the culture and archaeology is included in the Culture and Heritage Master Plan document.

8.1.1 Batu Tungan

All the Western Penan (i.e. those with origins in Plieran, Danum, Linau, and Seping River valleys) recognise this feature as an important cultural icon. The claim is strongest for the Plieran and Danum groups (Long Wat, Long Malim, Long Luar, Long Tangau, Long Singu, and Long Menapa), who continue to remember the myths of origin. Long Jek has also expressed a wish that their history in this area not be ignored and they are included in any consultation related to this feature.

Batu Tungan features in the cultural landscape and migration routes of the Penan and serves as a symbolic part of their identity (Figure 81). The feature has also served as a biographical place, which individuals passed as they moved up and down the rivers, and where they stopped to pray to guardian spirits.

While Long Wat, as the community living nearest to Batu Tungan, assume responsibility as guardians, the Penan of Long Singu and Long Luar also recognize that their ancestors came from this area not too long ago and have high regard for the site. There are ritual specialists in Long Wat who lead and conduct the Bungan rituals on the site.

The site is important and the belief is that in the absence of appropriate rituals of appeasement and propitiation, consequences include the wrath of guardian spirits, illness, and death for Penan. This is a place of avoidance and taboo and is the home of spirits. The site should not be altered or modified in any way and the Penan do not want the rocks and boulders to be affected by the dam but know that they cannot prevent it. Therefore, they request compensation and funding for performing appropriate supplication and propitiatory rituals.

According to Penghulu Pao Tului, the stories and legends about Batu Tungun and its associated feature Batu Tau have been passed down from generation to generation of Penan in the Murum area. He first heard the story about Batu Tungun and Batu Tau from his grandfather (Ngau Saong).

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24 Batu means rock and as a name can refer to rocky mountain outcrops or large rocks in the river. Batu Tungan is literally Tungan Rock.

25 Bungan is the traditional animist religion of many of the interior tribes.
The Story of the Origin of Batu Tungan

“Once upon a time, Batu Tungan was used by the Penan as a stairway to reach the sky or heaven in order to meet their departed families. One day, two Penan sisters were at these sacred rocks searching for food. The elder sister told the younger one that she wanted to go up to the sky (via Batu Tungan) to search for fruits for 2-3 days. However, after three days, she did not return but the younger sister continued to wait for her until she began to cry. She waited and waited until finally she became very angry and tossed a dog at the stairway, causing it to break and to collapse so that her elder sister could not return and die there.

The broken stairway then turned into rock and caused the water level to rise. Batu Tau was formed from the broken pieces of the stairway while Batu Tungan was formed from the collapsed stairway. The main rock was called Batu Tungan, which literally means “stump rock” in Penan language, because it resembles a tree stump. Batu Tau, on the other hand, means ‘new rock’ in Penan language. The collapsed stairway has blocked the main Sungai Sau and turned it into a smaller tributary of Sungai Murum as can be seen today. Prior to the collapse of the stairway, the main Sungai Sau flowed directly into Sungai Temaju and then into the mighty Rajang River.

Pengulu Pau Tului, (Long Wat 2010)

8.1.2 Batu Peben

Batu Peben is a series of rock outcrops along the Murum River that have special cultural and spiritual significance to the Penan (Figure 82). Long Wat is the
longhouse closest to the site and is responsible, however, many of the other longhouses also claim links to the site.

There are variations on the myth of origin. The following account, recorded by Langub (2009:11), is one of the most common:

“Two women lived on opposite banks of the Murum River. One had just given birth and the other was having her period. Thus, both were under ritual confinement and restricted to their longhouses. One of the women needed to borrow a needle from the other one. But everybody else had gone to work and there was nobody to take the needle across the river. So the woman with the needle pinned it to the ears of a dog, and sent the dog across the river. Due to the pain, the dog shook its head from side to side as it swam. One of the women laughed at the sight. The other woman scolded her in case her laughter brought on a thunderstorm. Thunderstorm and hail did come and longhouse, boats, and people were turned into rocks and boulders. Penan say the rocky cliff on the riverbank today resembles the longhouse of the myth, and the scattered rocks and boulders on the river resemble various other features of the myth, such as the boats and people sitting in them.”

Other accounts try to place this origin myth within the Batu Tungun time-frame, i.e., that it happened at the same time as the petrification of Batu Tungun or that the rockiness of that part of the Danum-Plieran axis is due to the collapse of Batu Tungun.

![Batu Peben - an important Penan cultural site.](image)

### 8.1.3 Lua’ Tekeleng

There are many pools or still water sites that have significance to the Penan. One of these is a pool in the river (*lua’* = pool) located between Long Malim, Long Wat (this site is also recognised by the people of Long Singu).

According to the legend connected to site, the pool is a place of avoidance and taboo and one cannot throw objects into the pool. There is a petrification myth, involving a mother and son. The son had stuck a sugar cane stem into the pool and was perhaps lost there and the mother went to retrieve the son. The rock in the pool is the petrified form of these characters and the sugar cane. There is also a rainbow belief, and beliefs about the magical properties of the pool.
This is a historical feature in the cultural landscape and migration routes of the Penan; symbolic, as part of their identity, ritual and taboo.

Long Malim and Long Wat, as the communities living nearest to it, have joint custodian responsibility. The belief is that damage to the site will result in consequences incurring the wrath of the spirits, illness, and death.

8.1.4 **Batu Pama and Batu Asuk**

These sacred sites are located along Plieran River with Batu Pama claimed by all the four longhouses along the Plieran - Long Singu, Long Tangau, Long Luar and Long Menapa. The name “Pama” means frog and Batu Pama is part of a sandstone rock formation stretching across the rapids of the Plieran River. The Batu Pama formation is said to resemble “frogs lining up to cross the river”.

Ceremonies are held to prevent bad things or tragedies befalling visitors or the people of the longhouse.

Batu Asuk is a sacred sandstone formation also located along the Plieran River and is claimed by the people of Long Singu, Long Tangau, Long Luar and Long Menapa. The name “Asuk” means dog in the Penan language and is said to resemble “dogs lining up to cross the river” (Figure 83).

According to legend, Batu Asuk was formed following an incident where two women laughed at a dog that was in pain because a needle was pierced into its ear. The legend or story is almost similar to the one given by Penghulu Pao about the sacred rock site of Batu Peben in the Danum River, Long Wat. Likewise, the Batu Asuk sacred rock formation should not be disturbed (e.g. splashing water on it or throwing stones at it) because such actions will lead to tragedies or thunderstorms.

![Batu Asuk rock formation](image)

**Figure 83 Batu Asuk, a sacred rock formation on the Plieran River.**

8.2 **Penan Beliefs and Religion**

According to Brosius (2001) if we wish to understand anything about the nature of Penan religion, we must look not at ritual, but to everyday language. Language is the primary site for the manifestation of all manner of Penan assumptions concerning the habits and motives of those believed to inhabit the supernatural realm. The Penan
possess a rich vocabulary used in prayers and in everyday use of avoidance terms intended to keep malevolent spirits at bay.

Like most indigenous peoples in Borneo the Penan are traditionally animists with observation of omens (amen) central to their belief system. In the mid-1950s, the Western Penan adopted Bungan, a syncretic religion which began to spread from the Apo Kayan, East Kalimantan in the 1940s, at the time when Protestant missionaries were gaining large numbers of converts there. The Bungan religion\textsuperscript{26} was founded by Jok Apui, a Kenyah from the Apo Kayan who had a vision in a form of a dream in which the female deity Bungan Malan told him to discard the old ritual restrictions, particularly those associated with bird omens, and thereafter pray only to her. Jok Apui proselytized widely in Sarawak and by the early 1950s a large number of people in the upper Balui of Belaga District converted to Bungan. The Western Penan of Belaga adopted Bungan as it did away with the numerous restrictions associated with omens they found onerous and irritating (Figure 84).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{long_wat_statues_and_offerings.jpg}
\caption{Figure 84 Statues and offerings at Long Wat.}
\end{figure}

However, in the late 1980s and early 1990s a substantial number of Western Penan, including the eight longhouses in the Danum, Plieran and Seiping rivers, converted to Christianity, either Catholicism or the \textit{Sidang Injil Borneo} (Evangelical Congregation of Borneo). Despite conversion to Christianity, traditional religious system and rituals continue to exist in the eight settlements. For instance, rituals associated with the farming season and others, such as \textit{minga liwen} (to subdue the thunderstorm) and \textit{batang marau} (to prevent an illness or epidemic to enter the longhouse) are still observed.

Although in their traditional belief system, Western Penan recognize the existence of a supreme deity, they are more concerned with the way spirits and souls operate in the general scheme of things. For instance, Penan pray to such beings before embarking on trips, during thunderstorms, and in the event of illness. Spirits and

souls are interrogated, reasoned with, cajoled, beseeched, addressed with biting sarcasm, and even scolded, in rapidly spoken sequences of rhymed couplets (Brosius, 2001).

The earliest written record that we have regarding the way Penan deal with thunderstorm is Needham’s article “Blood, Thunder, and Mockery of Animals,” published in Sociologus in 1964. In 1951 he had the experience of observing how the Eastern Penan of Long Buang in the Apoh River, Baram dealt with a “sudden and very noisy thunder-storm”.27 When a thunderstorm broke out abruptly, two young men immediately took their knives and with the tip of the blade made a small cut on the right middle toe, to obtain blood, which was then held in the rain dripping from the eaves. The mixture of blood and water was flicked out of the house. Needham writes that this rite was called “menyat apun, to beg for pardon or menyat kesian, to beg for pity or favour”.28 This ritual was followed by pulling a strand of hair, motong bok, which was then burned. This rite was not accompanied by an invocation, but a few words were uttered with rapid monotone. It was explained that if one or two people made blood offering the thunder would be appeased. If it didn’t, everybody would have to offer blood and burn hair, which would certainly stop the thunder.

Needham mentions that although he did not have the opportunity to observe a similar ritual among the Western Penan, he says that they do not make any blood offering to Bale’ Gau29.

In a paper presented in Kota Kinabalu at the 9th Biennial International Conference of the Borneo Research Council, 2008 a Japanese anthropologist, Katsumi Okono (Okono, 2008) describes his personal experience of how a group of Western Penan dealt with a raging thunderstorm that came suddenly at night while the group was sleeping in a hunting hut in the forest in the upper Belaga River. Okono was awoken to find two seemingly agitated women “praying toward the sky” one of them walking back and forth raising up her hands toward the sky, reciting an invocation to subdue the thunderstorm. There was no blood offering, no burning of hair, as was the case of a similar rite performed by the Eastern Penan of Long Buang in 1951, witnessed by Needham. The stream was swelling and everybody was alerted to get ready to leave in case the water level rose high enough to sweep the camp downstream. Okono describes the experience as scary, but an hour after the recitation of the invocation, the rain abated, and the water level also receded.

Responding to a query of how they would deal with a thunderstorm, the Penan of Long Singu say that if they feel bad about the thunderstorm, they would respond to it by performing their traditional rite of minga’ liwen (subduing the thunderstorm). This is done by an elder or two, standing on the verandah of the longhouse or hut, looking up toward the sky, reciting in a loud voice an invocation. Such invocations, composed impromptu, are rich in vocabulary with rhymed couplets called ipet. If the thunderstorm is caused by mockery of animals, especially by children who are not aware of the consequence of what they are doing, the elder who recites the invocation will cut a strand of hair from one of the children. The strand of hair is burned and held out in the open. The elder who recites the invocation continues his recitation, addressing, explaining the situation, even telling Bale’ Gau off with biting sarcasm such as below:

This is his hair, I burnt it.
I peeled it off, I killed it, Bale Gau.
When you look at us adults, we the mothers, we the fathers,

28 Ibid. p. 138.
29 Spirit of Thunder
Do we make fun of animals?
That is the doing of children:
They know not the adet; they know not the rules.
Ignore them; bother them not.
Don't you explode: gerau sagau, geru' sugu', up there.
Cease now, that's enough;
Be silent, be still, Bale' Gau.

Health and wellbeing are of great concern to the Penan. Whenever groups of Penan from different villages meet, the first question they ask is the health of the people in the village. This is followed by the general condition of life, self-sufficiency in meeting the every needs of the village. When people are in good health it means the availability of manpower to provide for the needs of the family and the village as a whole. If a number of people in the village are not well, it is a matter of concern to family members, and by extension the whole settlement. It means less number of people to look for food and cater for other needs.

When an individual has a fever, a headache or a small cut, there are people in the village who know a number of medicinal plants to stop the fever or headache or treat the wound. They also know a few medicinal plants that they can use as antidote for snakebite or poison. They may opt to visit the nearest rural clinic when they have a fever, a headache or an injury.

Of great concern to the Penan is kerapit, epidemic. It is something beyond their mere knowledge of medicinal plants to adequately respond to, nor the rural clinic to effectively deal with. It needs a team of doctors and health experts to deal with the situation. In January 2005, there was an outbreak of measles in the four Penan settlements in the upper Belaga River. The news reached Bintulu Hospital only after several children died of the attack. The news of the disease created panic in several Penan villages in Belaga.

When the news of the outbreak of measles reached the villages of Long Singu, Long Luar, Long Tangau, and Long Jek, everybody in the four longhouses was informed of the occurrence. Each longhouse immediately erected the Batang Marau across the path leading to the longhouse to act as a ‘wall’ to prevent the disease from entering the village. They also erected two statues of human figures, called Lake’ Palan, carved out of wood, carrying a shield and a sword. The two statues were planted on each side of the path, beside the Batang Marau, to protect the village from bad spirits that might bring in the disease. Prayers were recited at the sites.

As mentioned earlier, Penan also pray when there is illness in the community. They erect a tapo’ structure (a prayer station) and perform the ritual (menapo’), accompanied by egg offerings and prayer (tivai).

The Penan are aware that the landscape is dotted with sites that are male’ (forbidden, prohibited, or taboo). Sites such as sungan (saltlicks), ina’ mavui (pig wallows), tukong batu’ (mountain ranges with rock formations), serawah (open spaces) etc. are considered dangerous. They also believe that animals and plants have beruen (souls or life forces) that are potent and can cause harm to human if they are not accorded respect.

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30 Borneo Post, 2005 January 24, 2005, pp. 1&2; January 25, pp. 1&3; January 26, p. 3; January 28, pp. 1&3; February 1, 2005, pp. 1&3; and February 3, p. 3; The Star, 2005 January 28, and 29, and February 1 and 3.

31 This is a string or rattan tied on sticks along/across the lawn of the longhouse.
Penan know sites that are considered male’ and when they go to the forest, they either avoid such sites or observe the best of behaviour and keep their silence, if they happen to pass through them. They are mindful of the way they relate to animals: it is taboo to make fun of animals, or make any remarks about them. Whether dead or alive, the Penan maintain a respectful relation with animals.

A breach of human relationship with environment invites the wrath of the supernatural causing misfortune, thunderstorms etc. Penan believe that natural phenomena such as floods, landslides, or a failed hunting trip are caused by a breach in the human interaction with the environment. Spirits that abound in the landscape dislike humans intruding into their domain, especially if the visitor is disrespectful to the environment and the supernatural realm. When the Penan resettle, they will continue to relate to the forest much the same way they do now, though less frequently. Whatever belief system they hold will be used as a guide to the way they conduct themselves and they relate to their surroundings. It should be noted that the SIB and Methodist churches have increased their presence in the Plieran and Danum Rivers much more than previously, especially at Long Singu. At present, it is difficult to assess the impact this presence will have on the community.

The Penan recognize that there is a power beyond, a power greater than man. Their belief system is therefore formulated or adopted as a guide to give meaning to the world and their place in it and to deal with the problems that defy ordinary explanation or solution through direct means.
9 THE HOUSEHOLD ECONOMY

9.1 The Division of Labour

9.1.1 Household work, food preparation and cooking

Current Penan division of labour is fairly easy to understand and does not depart significantly from what has been recorded by Brosius and other researchers. Men generally do the heavy work and work outside the longhouse environment, and women do the housework. There is some crossover: for example, men help out with the children and women tend to the fields and gardens. Women also go fishing and collecting, either with their husbands and children, or in women’s-only groups. If they encounter any useful materials like (for example) rattans for weaving purposes, fruits, and wild vegetables, they will collect them as well. On the whole, work that involves travelling great distances, like collecting high-quality rattans that are only found in limited locations, is the work of men. Women’s contribution to subsistence can be considerable, but it has never been properly quantified relative to men’s productivity.

All of the tasks listed above are generally done either by wives or daughters of the right age. Men are not averse to holding a broom in their hands, and may undertake these chores if pressed to do so. However, how common is men’s participation in household work is not clear. Young men (both single and married) have certainly been observed young men at Long Wat and Long Malim doing casual cooking and cleaning. This may be an artefact of extended bachelorhood or time spent outside the community working or boarding at school.

While there do not appear to be set rules about meat preparation, a hunter never butchers his own game. Cooking, as mentioned above, is generally a female task. While boys don’t seem to be actively learning how to cook, they may acquire the skills later: there are certainly Penan men who know how to cook. The wives are generally responsible for managing food-storage (Figure 91).

Figure 91 Food preparation is generally done by the women.
9.1.2 General cleanliness and hygiene

A problem for Penan is being unable able to keep their homes and immediate surroundings clean. Social practice is to remove waste from the space around the longhouse, but there is no formal or organised waste disposal system. Thus, rubbish is collected and heaped elsewhere but remains part of the broader environment. Penan trash is increasingly non-biodegradable, but there are no official efforts to introduce methods to manage waste in the interior.

Every household is responsible for maintaining their own space, but common areas are hard to keep clean. This is a problem on two levels:

- Where multiple households are sharing the same apartment, “Who is responsible for maintaining shared areas in the apartment?”
- Outside the apartment, it is difficult to regulate the use and maintenance of community space such as, for example, the verandahs. Women (and their daughters) maintain the area in front of their own apartments but not elsewhere along the verandah. This could explain why some Penan of Long Wat and Long Malim have expressed preferences for stand-alone houses or small block apartments rather than longhouses.

9.1.3 Collection of cooking fuel and water

Of everyday importance to the household is the need for the ongoing provision of fuel wood and water to the household. Water is usually collected from rivers and or gravity-fed taps by girls and women as needed. Penan still depend on the surrounding forest for wood for cooking fuel. Even in households that can afford gas cookers, there is always a fireplace / hearth in the kitchen. Gas is expensive in Penan areas: for Long Wat, as much as $40-$50 per 25 kg bottle at the nearby timber camps. In a multi-<i>lamina</i> apartment where many families are cooking, the gas fuel runs out very quickly. Currently, no Penan has enough of a regular income that they can simply restock gas canisters as needed. Thus, they still need to cut wood for cooking. The activity of cutting and gathering of firewood is usually done by the senior household males (e.g. fathers, or grandfathers) who are no longer active food-collectors. Younger sons may be pressed into service, but it is more often the senior males who do this task.

9.1.4 Discussion

Penan gender roles tend to be asymmetrical in that, the burden of everyday of living in a marginal environment falls mainly on the women and girls. Although much has changed, it is still the case that women spend most of their time at home and men are much freer (finances permitting) to travel great distances.

Having husbands available to help with childcare and strong social networks to draw on for mutual support and aid alleviates the burden for women and it also helps to have daughters and daughters-in-law of the right age. The system works through a delicate balance involving everyone in the community. However, this system of mutual support and aid does not extend beyond the immediate circle of people with face-to-face interaction and this tightly knit group is all they have to depend on.

Thus, given the relative small size of Penan community populations, this system is easily destabilized. Two sources of destabilisation can be detected:

- Men working away from the community for long periods of time;
- Children going to boarding school and not coming home for days, weeks or months at a time

The first problem seems not to be severe at present. When Penan men work away from home (e.g. at timber camps), they tend to bring their wives and children with them. There are fewer people left in the community, but the demands and needs are also reduced. However, for long-term community stability, there is a great need to
provide local employment opportunities: to minimize out-migration and community fragmentation, and to enable fathers to play complementary roles in household maintenance.

Residential schooling, on the other hand, affects most of Long Wat school-age children. This is a problem in that it isolates children from the home environment, and also does not give them the skills they will need when they return to their home communities. This has already been observed among Penan youths in Lusong and the dam-affected area; whereby large numbers of post-residential schooled youngsters are “hanging out” unable to find employment due to their poor qualifications, yet lacking the skills to contribute to household maintenance. Residential schooling also increases the work burden for the parents left at home and this burden falls disproportionately on mothers’ shoulders. The energetic and health implications are not yet clear, but may be quite severe if women are not already healthy to begin with. Assuming birth rates hold constant, the long-term productivity and self-sufficiency of Penan households will likely decline if they do not have access to their children’s labour. In Cambodia, for example, the school term coincides with the rice harvest season. With children at school, these already-poor farmers have to spend additional money hiring work gangs from other villages to harvest their fields.

Realistically it is unlikely that there will be great numbers of Penan youths attending higher education for at least ten years. Furthermore, the majority of young Penan will probably return home when they finish schooling. Marriage and post-marital residence patterns have not changed much since Brosius’ study in 1987, and there is every reason to expect that the current Penan youths will go home, get married early, and start new households early. To survive, they will need coping skills that can only be acquired in-situ. Therefore, the new school facilities should be within commuting reach of the communities, so that children are not confined to dormitories, can help their parents during after school hours, and continue to learn relevant life skills from their parents. To achieve this, the problems of access and transportation will have to be resolved so there is no need for Penan to send their children to boarding schools.

An important consideration in community development is impact of the introduction of social practices that enhance community well-being along side the introduction of new practices that destabilize what used to work well for the community (Dove 1988). The current community structure is a form of social insurance, where there is ongoing support for those in need (orphaned children, childbearing parents, adoptive parents, extended social networks). This system has worked in the past when the community was intact and cohesive and the resources readily available. However, with the ongoing changes around and within the Penan community, this social support system (and the members the system protects) is becoming increasingly vulnerable.

9.2 Major and minor assets

Even though having only settled in longhouse living for a relatively short time, the Murum Penan own considerable durable assets. The longhouse structure is arguably the main asset for the community and by extension for the individual households living in the community. While this structure represents a major asset, this is an asset that has been, in most cases, provides for through external assistance (logging companies, government assistance, etc.). However, not all households can claim this as an asset as in most communities there are several households living in one apartment. The overcrowding is particularly acute in Long Jek, but the situation in all communities is that they must share the longhouse as a common asset (Table 91).

Table 91 Longhouse communities surveyed.

<table>
<thead>
<tr>
<th>Longhouse Name</th>
<th>Apartment (pintu / bilek / door)</th>
<th>Families (Lamin Household)</th>
<th>Population</th>
<th>Average Household size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Singu</td>
<td>53</td>
<td>64</td>
<td>248</td>
<td>3.9</td>
</tr>
</tbody>
</table>
In general, on a per capita basis the number of assets (other than their actual houses) owned by an individual or a household is very low. Based on information gathered during interviews and discussions, the majority of these assets were obtained within the last eight years. One of the earliest major assets obtained was boats. Considered an essential means of transportation prior to the existence of road, it is not surprising that most households own at least one. Some of these are for local use in the vicinity of the longhouse while others are intended for longer travel. The boats are built by the Penan themselves on a collective basis as was observed during the survey (Figure 92). While the boats can be self-built, the outboard motor is an asset that must be purchased. The type favoured in the Murum is the “long-tail” motor with a propeller attached to a long shaft, which the Penan are good at using in the shallow rivers (Figure 93). Outboard motors were reportedly purchased as early as 2002, at a cost of between RM 200 and RM 500 (Table 92).

![Figure 92 A boat being built at one of the longhouses.](image)

Only a few Penan have managed to amass enough capital to purchase motorcycles or other vehicles. Currently, there are seven motorcycles owners from five longhouses and the Tuah Kampong of Long Peran owns a Toyota four-wheel drive pick-up. The sons of this Tuah Kampong use the vehicle to transport goods bought in the shopping centre at Aloi to the longhouse and provide transport services charging passengers from Aloi to Asap RM15 per person.
All the longhouses have petrol-powered generators for electricity. These generators have generally been purchased collectively and the running costs are similarly shared among the residents. Long Malim was the only community without a generator in operating condition, theirs having broken down and in need of repair. The generators are used for powering lights as well as another asset now found in the communities; television and radio sets.

Across all the communities there are a total of 31 television sets receiving signals from satellite receiving parabola. While the televisions are generally individually owned, viewing is on a share basis where all residents either gather on the verandah to watch or gather in the headman's apartment. Some families (15) also own transistor radios individually.

The most recent item that can be considered an asset is the mobile phone. In spite of the fact that most of the communities have no cellular telephone coverage, both adults and teenagers own mobile telephones. These telephones are generally purchased at Aloi junction and the largest number of owners is from Long Peran, with 10 mobile phones out of 44.

![Outboard engines used along the Danum and Plieran Rivers.](image)

**Figure 93** Outboard engines used along the Danum and Plieran Rivers.

<table>
<thead>
<tr>
<th>Private property</th>
<th>Total number of units</th>
<th>Value (RM)</th>
<th>Year purchased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor car</td>
<td>1</td>
<td>60,000</td>
<td>2005</td>
</tr>
</tbody>
</table>

**Table 92** Major and minor assets owned by the community (8 Longhouses).
Motor cycle  |  7  |  NA  |  NA  
Canoe / boat  |  87  |  Self-produced  |  2004 - 2009  
Outboard motor  |  30  |  200 – 1500  |  2002 - 2009  
Generator  |  7  |  800 – 3000  |  2005 - 2009  
Parabola television set  |  31  |  350 – 800  |  2006 - 2008  
Wireless / Radio  |  15  |  60 – 800  |  2006 - 2009  
Mobile phone  |  44  |  100 – 500  |  2006 - 2009  

Through the influence of and trade with their non-Penan (lebu\(^{32}\)) trading partners, the Murum Penan communities are acquiring little by little a collection of modern assets (out-board engines, generators, TV sets, motor cycles etc). Their interest in acquiring these assets that require cash to purchase is a factor influencing them towards adopting cash economy activities other than the traditional ones that rely solely on the forest. A growing number of Penan are now seeking wage-earning employment in the companies and government agencies.

The possession of such non-traditional assets may be considered as a step to modernisation. These items are expensive to acquire, require considerable sums of money to maintain, and tend to depreciate over time. Thus, it can be questioned whether these items should be considered as assets. The procurement of such assets is generally only when there is excess cash after fulfilling the requirements for food and other household essentials. Very few Penan presently have excess cash to purchase such items. However, when the Penan have acquired more cash from wage earning employment, contract works or cash compensation from the Government, it is likely that more cash will be spent on these items. The concept of managing cash is new to the Penan as the kind of economy the communities are immersed in is based on their own unique socio-economic setting in which sharing as a form of social insurance plays a dominant role. (This issue will be addressed later in Section 9.3) This is an important consideration in terms of how to best advise the Penan on how to invest their excess cash to earn long-term benefits for their family’s welfare; especially in view of the substantial compensation payments they will receive for resettlement.

### 9.3 Livelihoods and Incomes

In discussions about wealth, the informants denied that anybody in the community was rich. They dismissed the conventional symbols of wealth (outboard motors, TVs, etc.). Leaders have monthly allowances from timber camps but the money quickly dissipates through the community. It seems that for Penan, no one is rich because no one can accumulate wealth. Wealth to them is limited to the flow of money and having more valuable possessions than others is not a sign of wealth if the flow of money is not reproducible. Thus the general perception is that everybody is poor.

However, everybody in the community is enmeshed in a tight network of relationships cutting across kinship, marriage, and physical proximity. This network operates a kind of “invisible economy” that is difficult to translate into econometric terms. As social insurance, this invisible economy sustains a safety net protecting the most vulnerable members of the population (i.e. non-producing consumers like children, the old, and

\(^{32}\) General term for anyone not a Penan.
the infirmed). How it works is simple: any food and money that is brought into a household is subject to the demands of others outside that household. For the producers, this can be a source of frustration since it militates against accumulation of independent wealth. But for those at the receiving end of the exchange, having these ties allows them to ask for help and support and make it through another day when no other source of food and income is available.

To capture a flavour of interdependencies among households, the flow of money and food among households was monitored over nine days in Long Wat. Discussions with key informants in the other communities revealed a similar situation with regards to the flow of money. There was a great deal of under-reporting in the survey (sources and inputs of cash and food; outputs via cash expenditures, loans, and gifts). However, what is clear is that money is shared and money flows through the Penan economy almost as though it were a common good. The results of this cash flow and a comparison with previous research are presented in the sections that follow.

### 9.3.1 Cash Flow and incomes in the Penan Economy

In May 1993, Khoo (SESCO 1994:26–34) documented a modal cash income of RM500 for 33 households in Long Wat (based on recall interviews). Average incomes were RM1320 for the cash-earning households, or RM920 for all households, with great inter-household variation. The major sources of cash income for all communities were from hunting (major game sold were pigs, sambar deer, barking deer), fishing, the sale of forest products, and the sale of crafts (parang, knives, mats, baskets, blowpipes). Adjusting for inflation and the changed economic profile, one would expect to see some improvement, at least in the basic numbers, of the current incomes. Table 93 outlines the results of income surveys conducted as part of this study.

<table>
<thead>
<tr>
<th>Date</th>
<th>Households interviewed</th>
<th>Households reporting cash incomes</th>
<th>Total incomes (RM)</th>
<th>Average incomes per household (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/10/09</td>
<td>19</td>
<td>1 (5.3%)</td>
<td>40</td>
<td>40.0</td>
</tr>
<tr>
<td>17/10/09</td>
<td>20</td>
<td>6 (30%)</td>
<td>460</td>
<td>76.7</td>
</tr>
<tr>
<td>18/10/09</td>
<td>16</td>
<td>6 (37.5%)</td>
<td>110</td>
<td>18.3</td>
</tr>
<tr>
<td>19/10/09</td>
<td>21</td>
<td>9 (42.9%)</td>
<td>240</td>
<td>26.7</td>
</tr>
<tr>
<td>20/10/09</td>
<td>11</td>
<td>3 (27.3%)</td>
<td>85</td>
<td>28.3</td>
</tr>
<tr>
<td>21/10/09</td>
<td>13</td>
<td>4 (30.8%)</td>
<td>130</td>
<td>32.5</td>
</tr>
<tr>
<td>22/10/09</td>
<td>13</td>
<td>9 (69.2%)</td>
<td>405</td>
<td>45.0</td>
</tr>
<tr>
<td>23/10/09</td>
<td>21</td>
<td>3 (14.3%)</td>
<td>60</td>
<td>20.0</td>
</tr>
<tr>
<td>24/10/09</td>
<td>18</td>
<td>6 (33.3%)</td>
<td>230</td>
<td>38.3</td>
</tr>
<tr>
<td>Total</td>
<td>47 (30.9%)</td>
<td>1760</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 1 Some households interviewed multiple times in a day; interviews total 190

The total earned by all households interviewed during this period was a mere RM1760. Divided between the 24 participating households, that comes to just RM73.3 per household or slightly more that RM8 per day.

Only 31% of the households interviewed reported daily incomes. The average daily income (the total of all household earnings) was only RM195.60. Average incomes

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per household ranged from RM18.30 to RM76.70 per day. In fact the modal income per transactions were RM20 (12 transactions) and RM30 (11 transactions). Indeed, only on one instance did someone report earning money from more than one source. Using the modal earnings as a reflection of income levels across the community on a good month with something to sell or work for every day, Penan household incomes would range between RM600–RM900 per month. However, these types of earnings are extremely variable and not evenly distributed throughout the community (e.g. only 31% of the households reported an income).

No matter how the data is analysed, when compared to 1993, Long Wat income levels have either remained the same or seriously declined. The only thing that might be changing is that there is an increased flow of cash into the community via wages, allowances, and the odd SOCSO payment. Still, Penan perception is that “nothing has changed” and they are still poor. There does seem to be more money, but yields from hunting and fishing have declined drastically, overall food from the forest and rivers is harder to find, and more has to be bought from the shops more often. Money rarely lasts long in a person’s hands. For example, one young man was paid $105 for three days’ field assistance. In less than a week, he had no money with most having gone to his brother’s household to support the children’s school expenses. The rest went on food and to other relatives. This is not surprising as the data reflects the social reality; that cash is coming in only 31% of the time on average, from a low of 5.3% to a high of nearly 70%. Adjusting the data for known earners of wages and allowances and including the women’s incomes from selling craftwork, would result in less day-to-day fluctuation, but it is doubtful that the percentage of cash earners would rise much.

These findings provide a snapshot specific to the period of the study and as such the magnitude of error is not easy to ascertain. Not included were the income streams such as remittances from the few men working at nearby timber camps and end-of-month allowances for community leaders. Further, many men were working for a timber trader (selling sawn timber on contract) and thus not available to hunt, fish, and make crafts for sale. These sources of income are treated in more detail in later sections.

For this data to be useful, it is necessary to make a qualitative judgment: whether the nine days represented a good, average, or bad period for Penan compared with any other time of the year. Essentially, whether the data is representative and can be generalized beyond this limited study period. The indications are that the data is representative of an average period, with fruits ripening and available for sale to nearby timber camps, some money coming from multiple sources, thus allowing participating households to keep at survival levels. The loss of daily incomes from hunting and fishing (replaced by expectations of a “payout” at the end of the month from the timber trader) would have been offset by some remuneration from the visiting researchers.

9.3.2 Sources of Income

Table 94 lists the sources of incomes reported by households interviewed in Long Wat. These are instances of actual cash transactions only and do not include products that were being made, such as mats and rattans that women worked on in between other tasks. Further, some Long Wat women located at Asap were weaving and selling crafts but they are not covered in this survey. In general, the resource base at this time was narrow and confirms the Penan’s own observation that environmental resources are in severe decline: no pigs and arboreal game shot and sold (although consumption of young macaques were reported twice), even during the high-density feeding period of the fruit season. Most reports suggested that net

33 Among Batek in Taman Negara, Pahang, the fruit season is abundant for game as well, and many days go by where the diet is completely limited to fruits, fish, and game (Lye 2004). For comparison with Penan Benalui of Kalimantan, see Puri(2005).
fishing accrued one to four fish per catch, all apparently small and thus economically not viable. There is, however, continuity with 1993 patterns, as the data below shows.

Table 94. Sources of cash incomes at Long Wat

<table>
<thead>
<tr>
<th>Source of income¹</th>
<th>Total transactions (MR)</th>
<th>Total earned (MR)</th>
<th>Average per transaction (MR)</th>
<th>Total earnings by category (MR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sale of fruits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durian</td>
<td>17</td>
<td>430</td>
<td>25.3</td>
<td></td>
</tr>
<tr>
<td>Rambutans</td>
<td>3</td>
<td>90</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>Bananas</td>
<td>2</td>
<td>40</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>Langsat</td>
<td>1</td>
<td>30</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>Unidentified species</td>
<td>1</td>
<td>40</td>
<td>40.0</td>
<td>630</td>
</tr>
<tr>
<td><strong>Sale of animal products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>4</td>
<td>100</td>
<td>25.0</td>
<td>100</td>
</tr>
<tr>
<td><strong>Sale of crafts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parang</td>
<td>6</td>
<td>230</td>
<td>38.3</td>
<td></td>
</tr>
<tr>
<td>Blowpipes²</td>
<td>2</td>
<td>150</td>
<td>75.0</td>
<td>380</td>
</tr>
<tr>
<td><strong>Sale of cultivated crops</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocoa</td>
<td>1</td>
<td>50</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Unidentified product</td>
<td>1</td>
<td>30</td>
<td>30.0</td>
<td>80</td>
</tr>
<tr>
<td><strong>Wages and allowances</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wages from timber sales</td>
<td>5</td>
<td>470</td>
<td>94.0</td>
<td></td>
</tr>
<tr>
<td>Allowances from timber camps</td>
<td>2</td>
<td>100</td>
<td>50.0</td>
<td>570</td>
</tr>
<tr>
<td><strong>Total earnings</strong></td>
<td></td>
<td></td>
<td></td>
<td>1760</td>
</tr>
</tbody>
</table>

¹ No price details: 1 sale of vegetables; 1 earning from timber sales
² One blowpipe sold with dart-poison. The other blowpipe was a small one. A blowpipe made of belian wood can fetch up to MR300.

Compared to 1993, game is no longer a dependable commodity. Fishing (with pukat and jala) brings the odd return but it is extremely low relative to actual events of fishing. There were no sales of forest products documented during the study period although afterwards one of the men did sell bezoar stones at Asap. The main continuity in income is craftwork: selling parangs, knives and—though not documented in this brief study—rattan products.

Cultivated fruits were the highest income earner, accruing a total of RM630 over 24 transactions during the survey. Not a day went by without a single sale of fruit. However, although 16 households reported fruit sales as a source of income, on any given day the number of participating households was small, from one to five only. Durians were the most popular fruit items sold: sometimes people took the durians to the nearby Plieran logging camp, but a car would come from the camp every evening. Haggling over prices was intense: the average per transaction was less than for rambutans and langsat. The modal price for a durian is about RM5 among

³⁴ Gill and casting nets
those who provided details. Although Long Wat durians were described as the best available in the area, they seemed unable to take advantage of their monopoly to set higher prices.

The next highest earners were wages and allowances and this is likely to be severely under-reported. There were researchers in the community at the time of the survey, some of whom were engaging guides and hiring boats. These wages were not reported and have been excluded, as they cannot be viewed as a “regular” source of income. That aside, a group of men were working on contract, selling sawn timber to a trader and the sums reported represent earnings for the previous month’s work. This is also an “extraordinary” event, in the sense that it is not an everyday source of income. The contract was started around September or October, employing young men home from Asap. After four months (i.e. December) the work was still going on, but the numbers of participating men varied by the day. Average earnings from this work were RM94 per transaction, although the range was great, from RM10 to RM200 per person. One man also reported receiving allowances from a timber camp (usually paid out to headmen and village committee members), which he halved to give to another payee.

Craft production was the third highest earner, but it involved only a few men as about half the productive craftsmen were at Asap. Also, some of the income as not “regular” as the sales went to visiting researchers. Still, if one considers that the average price of a parang to be RM30, and the average number of parangs made per day to be three (working without interruptions), this can be a dependable source of income if metal and rattan are available and a regular outlet for sales at market prices (as specialty items from the Penan) is developed. Although wages, allowances, and timber sales bring more money, these are end-of-month payouts; and the sale of timber was particular to the time only. Craft items provide an important bridging income for the lean times in between the “boom” periods.

9.3.3 Occupations and sources of cash income.
The previous section provides a detailed account of cash flows and the interdependencies of the economy in the largest of the eight communities, Long Wat. Based on the household surveys, the details regarding the various occupations and other sources of cash income for the Murum Penan communities are outlined below. Essentially, there are four principal sources of cash income:

- Revenues derived from non-wage activities – in the traditional forestry activities and farming;
- Wage-earning activities – working in timber and plantation industries, service industries and government institutions;
- Allowances received from timber companies; and
- Assistance from government.

These four sources are outlined in Table 95 and discussed in detail in the following sections.

Table 95 Major occupations of the Murum Penan.

<table>
<thead>
<tr>
<th>Occupations</th>
<th>Frequency</th>
<th>% Of population (1,531 people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-wage earning activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Hunting, Gathering, Farming, Gardening, Handicraft making, etc.</td>
<td>420</td>
<td>27</td>
</tr>
<tr>
<td>(ii) Small business</td>
<td>3</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Sub-total - non-wage earning activities</td>
<td>423</td>
<td>28</td>
</tr>
<tr>
<td>2. Wage-earning activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9.3.3.1 Sources of income from non-wage earning activities

Non-wage activities are those traditionally carried out by the households and include; hunting, gathering jungle products, farming, gardening, handicraft making, and other traditional activities. These activities are primarily concerned with providing food, shelter and materials and tools for household needs. Only when the basic needs have been met and there is excess are the products used for sale. When forest resources were abundant and immediately available, there was greater opportunity to derive cash income from this source. However, as the availability of the resources has declined and the time needed to access and gather the resources has increased, the opportunities for cash from this source have declined.

During the surveys and discussion with the eight Murum Penan communities a number of sources of non-wage income were described (Table 96). Of note is that very few Penan have ventured into some minor business enterprises.

Table 96 Primary sources of non-wage cash income.

<table>
<thead>
<tr>
<th>Primary source of non-wage cash income</th>
<th>Freq.</th>
<th>% Respondents (248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest products likes animals and vegetable, timber, etc.</td>
<td>248</td>
<td>100.0</td>
</tr>
<tr>
<td>Selling garden product likes vegetables and fruits</td>
<td>145</td>
<td>58.5</td>
</tr>
<tr>
<td>Crafts &amp; tools likes parang, ‘Ingen’, Baskets, mats, blow pipe and etc</td>
<td>43</td>
<td>17.3</td>
</tr>
</tbody>
</table>

Note: Respondents can give more than one answer.
There are essentially three major groups of non-wage income:

(a) Forest products (wildlife, fish timber logs etc.);

All the respondents reported that the sale of forest products (wild game, fish) were major contributors to their cash income. In addition, there were some who were engaged in extracting logs, which were sold to logging camps. Earnings from
extracting logs for sale to timber camps were relatively lower than those earned by truck drivers and loggers employed directly by timber companies. For example, at Long Wat a group led by an Iban who married into the community, sold their own sawn timber between 6 to 7 tonne per month and earned between RM200 and RM700. However, the quantity extracted and sold depended on the availability of the logs in their surrounding forest.

(b) Sale of garden produce (fruits and vegetables); and

The second source of non-wage cash income came from the sales of vegetable and fruits (where 58.5% of the respondents reported they received from these sources). The smallest proportion (17.3%) of the respondents mentioned that selling of handmade tools and crafts – such as baskets, mats, knives (parangs), and blowpipe / spears contributed to their cash income.

(c) Handicrafts and tools (parang, baskets, mats, blow pipes, etc.)

Only 77 out of 248 respondents said they were involved in producing crafts and handmade tools. However, only 17.3% of the respondents produced such products in excess for sale. Most of these crafts people and toolmakers are from the older generation. Younger residents were seldom seen to be involved in this type of activities and only one case of an 18-year young man from Long Menapa learning how to make parangs from his father was noted.

The usual forest product crafts are items such as baskets, mats, fish traps, blowpipes, and the popular Penan carrying baskets (Figure 94). The basket and mats are renown for their quality and woven from rattan fibre. All the materials for the crafts – with the exception of the steel for making knife and spear blades and colourful beads for beadwork – come from the forest. Hardwood is required for making blowpipe. Bamboo, tree bark, ferns and many other fibres are all extracted from the forest.

Figure 94 The Murum area is well known for its fine woven rattan baskets.

One of the limitations highlighted during the survey was that the raw materials such as rattan and timber were less easily available and required travel a long distance away from the longhouses to the forest to gather the material. As a result, the handicraft makers produce less baskets and mats and likewise produce fewer items such as boat paddles because the timber is difficult to obtain. There is now an acute shortage of raw material from the forest due to the depletion of the resources within all the areas.
The length of time taken for producing crafts and handmade tools varies with the availability of raw materials, the free time available and the type of crafts or tools to be made. The general guidelines for time taken to produce different crafts are:

- Mats – two to seven days.
- Baskets – two to seven days.
- Parang – one to two days.
- Blowpipe – two to seven.

Work on some craft items such as mats, baskets and parang is usually done as a full day’s concentrated work, whereas for items such as a blowpipe a craftsman will only spend half a day at a time (Figure 95). In general, all craft making work is part-time when there is time and sufficient raw materials available. The shortage in materials is not only applicable to forest products. For parangs, steel was formerly collected freely from the timber camps. However, now they are not allowed to collect the steel as the price of iron is high and the company sells it. Parang makers must now buy the steel from the company.

![Figure 95 Parangs are made in most of the communities.](image)

Most of the crafts produced are not sold but made for the producer’s own use. While they do not specifically make these crafts to sell, they would sell some of them to visitors who ask for them. These visitors include government officials, tourists, missionary workers and NGOs. Specific crafts or tools are also produced if requested by their ‘customers’ who work at logging camps. In general the tools that they are using on a day-to-day basis (such as parang and knives) are sold at a higher price, as such tools have been proven to be sharp and durable. While there is some local demand, in view of the difficulty sourcing local raw materials from the forest, the high cost of steel and the demand of time from other activities, fewer crafts and tools are being produced.

Table 97 outlines the types, estimated quantity, local prices and estimated value of crafts items produced by 50 households in a year. The earning estimate depends on a number of factors including the availability of the raw materials and the availability of a market for the products.

Table 97 Estimated income derived from Murum Penan handicraft items (50 families).
<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated Quantity produced / used by community per year</th>
<th>Local price / unit</th>
<th>Estimated total value per year (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rattan baskets (5 types)</td>
<td>350 Basket</td>
<td>25.00</td>
<td>8,750</td>
</tr>
<tr>
<td>Rattan mats (3 types)</td>
<td>180 Per mat</td>
<td>150.00</td>
<td>27,000</td>
</tr>
<tr>
<td>Pandanus mats</td>
<td>100 Per mat</td>
<td>40.00</td>
<td>4,000</td>
</tr>
<tr>
<td>Blowpipes (dart, container)</td>
<td>15 Per blowpipe</td>
<td>150.00</td>
<td>2,250</td>
</tr>
<tr>
<td>Boats + paddles + poles</td>
<td>25 Per boat</td>
<td>270.00</td>
<td>6,750</td>
</tr>
<tr>
<td>Lesong (rice mortar)</td>
<td>25 Per unit</td>
<td>500.00</td>
<td>12,500</td>
</tr>
<tr>
<td>Musical Instruments</td>
<td>5 Per unit</td>
<td>200.00</td>
<td>1,000</td>
</tr>
<tr>
<td>Hats, fans, winnowing stuff</td>
<td>300 Per unit</td>
<td>20.00</td>
<td>6,000</td>
</tr>
<tr>
<td>Fishing equipment</td>
<td>50 Per unit</td>
<td>20.00</td>
<td>1,000</td>
</tr>
<tr>
<td>Utensils</td>
<td>50 Per set</td>
<td>50.00</td>
<td>2,500</td>
</tr>
<tr>
<td>Parang handle and scabbard and tools</td>
<td>50 Per set</td>
<td>70.00</td>
<td>3,500</td>
</tr>
<tr>
<td>Coffin</td>
<td>3 Per unit</td>
<td>200.00</td>
<td>600</td>
</tr>
<tr>
<td><strong>Total estimated value of sales</strong></td>
<td></td>
<td></td>
<td>140,950</td>
</tr>
<tr>
<td><strong>Estimated average value per household</strong></td>
<td></td>
<td></td>
<td>2,819</td>
</tr>
</tbody>
</table>

As indicated in Table 95 above, only a small number of the Murum Penan have ventured into market-oriented businesses not related to either forestry or agriculture. During the survey there were only such three cases were found. One was a woman from Long Menapa who made local cakes to sell to the nearby logging camp (selling a packet for RM1.00 and earning RM20 per week, or RM80 per month). She said she learned to make the cakes from her sister-in-law who married a Kenyah Badang teacher. The other two were operating small village shops at Long Peran with a monthly earning of RM500 and RM800 each.

### 9.3.3.2 Sources of income from wage-earning activities

**Employment in timber industry**

Most of the Murum Penan wage earners were found to be from the timber industry. The major types of wage-earning employment in the timber industry are timber truck-drivers and loggers in timber extraction; and general workers, mechanics, and security workers at sawmills and timber camps. Incomes from these sources varied with the types of employment and details of this employment can be found in Appendix Six.

Those working for the logging companies as drivers or loggers tend to earn more than any other form of employment available in the timber industry. For those few Penan working with timber companies the range of monthly wages earned are as follows:

- Long Malim workers were paid between RM1,000 and RM1,500;
- Long Wat and Long Luar timber workers were paid between RM1,000 and RM1,200;
- Long Menapa workers reported being paid from RM900 to RM1200 per month, though some workers were paid according to the timber tonnage they produced at RM10 to RM12 per tonne;
- Long Tangau workers were paid RM8 per tonne; and
• Long Singu workers were either paid on daily basis at RM25 per day, or RM900 per month.

The highest paid man is from Long Menapa who works as a lumberjack and earns RM3,000 per month (Appendix Six). There is considerable variation in the wages depending on the type of work performed. Also, as the total number employed is also small, this accentuates the variation in the earnings.

Wages for working in sawmills are usually lower with some, such as those from Long Jek earning only RM325 per month. For those working as general workers, they are usually paid between RM15 and RM25 per day and this gives them an average monthly income of RM500.

**Employment in oil palm plantations**

There are very few Penan employed in the nearby oil palm plantations and during the survey only two persons were identified. From Long Menapa, a Penan worker at an oil palm estate earns RM1,300. He is an example of a worker with MyKad and receiving a salary through a bank and keeping a savings account. The other plantation worker is from Long Peran working as a planter earning an average wage of RM600 per month.

**Other forms of employment**

Apart from working in the timber industry and the oil palm plantations, there were a few cases of Murum Penan employed in government agencies or working for individuals in other communities. These cases are reported individually below:

(i) House maids – There are two cases of Penan women working as housemaids earning a monthly wage of RM200; both are from Long Wat.

(ii) Government servant – Only one Penan is employed in the government service earning RM 2,500 per month.

(iii) Community leaders – as appointed by government (Tua Kampong or Penghulu) the eight heads of longhouse are paid an allowance of RM450 per month. The stipend from the government is consistent with the other heads of longhouses throughout the State.

(iv) Working for individuals in other communities - at Long Malim, the Penan are paid RM25 per day by the Kenyah Badang for general work, and RM600 per month for woodwork. At Sungai Asap, the Long Wat Penan who work for the Kayan in an oil palm estate are paid between RM15 to RM25 per day. Some Penan of Long Menapa and Peran communities working for the Orang Ulu (Kayan and Kenyah) as general workers are paid RM25 to RM50 per day and RM20 per day respectively.

Based on the above observations, it can be seen that the Penan in Murum are gradually moving towards the cash economy by seeking employment in a variety of industries available in the Murum area. They need cash incomes to meet their household needs as they find it increasingly difficult to rely on the forest to provide them all the household necessities for survival as well as providing trade items for obtaining cash. The biggest provider of employment - albeit a small number - is presently the timber industry. The oil palm plantation industry is gradually increasing its role in providing employment for the Murum Penan communities but the numbers are still small. Self-employment in agriculture, especially in the food production and smallholder cash crops and other small-scale economic ventures can be developed only with outsiders’ interventions, especially through government’s development initiatives, as well as the influence and encouragement of the other non-Penan (lebu) communities.

**9.3.3.3 Allowances received from timber companies**

According to information given by the residents of six longhouses (no information was received from Long Wat and Long Malim), they receive monthly payments or
allowances from the various logging camps situated in the vicinity of the longhouses. There are five companies working in the area that provide allowances for the longhouses.

Of the six longhouses interviewed, Long Jek receives the highest amount of allowance payment totalling RM6,500 per month (mainly because they have negotiated an apartment-based payment in addition to the headman and committee allowances). For the other longhouses, the respective heads of the longhouses and village committee members are the recipients of the allowances from the timber camps collecting on average RM1725 per community. In all cases, in spite of the fact that the headmen receive the money, this does not mean that they keep the money for their own use. According to the Headmen, it is their responsibility to provide for those who were in need of assistance, thus the money generally gets distributed within the longhouse. The assistance could be in the form of cash or household food such as rice or sago flour.

Long Menapa reported the lowest amount of allowance paid to them (RM650), however their earnings received from wages were one of the highest with an average of more than RM1,500 per month. Conversely, Long Jek while receiving the highest allowances had the lowest wage earnings with a monthly average of RM325 (See Appendix Six).

9.3.3.4 Assistance from government

Based on the respondents’ views, the Penan generally maintained that it was important to receive government grants. However, it was observed that governmental assistance has not been regular. It is noted that the two months before the study (August to September 2009) they received 20 kg rice, cooking oil, salt, and sugar per family. Also for Long Wat children who were schooling, they were each given a grant of RM250 per year.

9.3.4 The Economy of Murum Penan Communities

Given the general low numbers of people employed in any of the communities it is evident that the Murum Penan survival is by exploiting a variety of sources of income. While wages, allowances and income derived from a variety of sources all contribute to the economy of the Penan, they still rely to a large degree on the forest for a significant portion of their “income”.

Table 98 provides a summary of the estimated replacement value of products derived from the forest and how this contributes to the overall incomes of the communities. The replacement value is the value of garden products, forest products and proteins (from wildlife and fish) that the Penan households have been depending on for their livelihood (Figure 96). This value is computed on the basis of replacement or opportunity costs of the products (i.e. what they would have to pay if these resources were not readily available). The table indicates that this replacement value of items gathered from the forest and home garden is about RM783 per month (in other words, a family would have to pay this amount to replace the value of the items if they were not available). The incomes from other sources (wages and allowances) are well below the present official rural poverty line of RM810 per month. However, the Penan have been able to survive by relying on forest resources to supplement what they do not earn. The implication is; that as the forest resources become degraded and more difficult to access they lose this “income” and remain well below the poverty line.
Figure 96 Forest products make up a significant portion of the household economy.

Table 98 Murum Penan economy - replacement value of forest products and other income (50 families).

<table>
<thead>
<tr>
<th>Replacement value and incomes</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual replacement value of garden products (for 50 families)</td>
<td>92,376.00</td>
</tr>
<tr>
<td>Annual replacement value of forest products (for 50 families)</td>
<td>259,258.00</td>
</tr>
<tr>
<td>Annual replacement value of protein from wildlife (for 50 families)</td>
<td>117,976.00</td>
</tr>
<tr>
<td>Total replacement value of forest products, garden products &amp; protein from wildlife (for 50 families)</td>
<td>469,610.00</td>
</tr>
<tr>
<td>Annual replacement value per family (based on 50 families)</td>
<td>9,392.20</td>
</tr>
<tr>
<td>Replacement value per family per month</td>
<td>782.68</td>
</tr>
<tr>
<td>Timber camp allowance per household (Table 99)</td>
<td>57.00</td>
</tr>
<tr>
<td>Average household cash income (Table 99)</td>
<td>108.00</td>
</tr>
<tr>
<td>Total forest value + cash income per month per family</td>
<td>947.68</td>
</tr>
<tr>
<td>Sarawak rural poverty line</td>
<td>810.00</td>
</tr>
</tbody>
</table>

Table 99 provides a summary of the various types of cash incomes received by the 8 Penan communities of the Murum area. The average cash incomes (from wages and allowances) for each of the 8 communities vary between RM 50 and RM320 per month. The overall income of eight community of Penan from allowances is RM21,450 and total wages are RM40,430 per month. Assuming that the wages and allowances are distributed throughout the communities, the average wage per family is a meagre RM108 per month and the allowance per family is RM54.

The cash income in the communities places all the families well below the Sarawak official rural poverty line of RM810 per month. However, as has been outlined the Penan are able to survive by relying on the forest for much of the food and material
needs. If considered as “income” the replacement values of forest and gardening products and the cash incomes provides an estimated total family “income” per month of about RM948 (Table 98). This however is a precarious situation as the forest resources are under increasing pressure from other land uses and the Penan must spend increasing amounts of time to gather forest products. This time is also time lost from potential wage earning as well.

The above observations demonstrate that the Penan communities are in transition from an economy based on forest products to one requiring cash income from wage-earning employment to ensure that their household income is above poverty line.

Table 99 Summary Of Total Cash Income (Wages and Allowances).

<table>
<thead>
<tr>
<th>Community</th>
<th>Total Wages</th>
<th>Total Allowances</th>
<th>Total cash income/ community</th>
<th>No. Of families</th>
<th>Ave cash income/ family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Jek</td>
<td>3,750</td>
<td>6,500</td>
<td>10,250</td>
<td>49</td>
<td>209</td>
</tr>
<tr>
<td>Long Peran</td>
<td>6,900</td>
<td>2,350</td>
<td>9,250</td>
<td>34</td>
<td>272</td>
</tr>
<tr>
<td>Long Wat combined</td>
<td>9,550</td>
<td>6,500</td>
<td>16,050</td>
<td>83</td>
<td>193</td>
</tr>
<tr>
<td>Long Wat Danum</td>
<td>3,250</td>
<td>6,500</td>
<td>9,750</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Long Wat Asap</td>
<td>6,300</td>
<td>6,300</td>
<td>12,600</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>3,400</td>
<td>1,550</td>
<td>4,950</td>
<td>28</td>
<td>177</td>
</tr>
<tr>
<td>Long Malim</td>
<td>6,600</td>
<td>6,600</td>
<td>13,200</td>
<td>46</td>
<td>143</td>
</tr>
<tr>
<td>Long Singu</td>
<td>6,650</td>
<td>2,350</td>
<td>9,000</td>
<td>64</td>
<td>141</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>2,580</td>
<td>650</td>
<td>3,230</td>
<td>39</td>
<td>83</td>
</tr>
<tr>
<td>Long Luar</td>
<td>1,000</td>
<td>1550</td>
<td>2,550</td>
<td>52</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>40,430</td>
<td>21,450</td>
<td>61,880</td>
<td>395</td>
<td>157</td>
</tr>
</tbody>
</table>

Average wage/ family= RM102
Average allowance/ family = RM54

9.3.5 The social aspects of money and food

As suggested by the income data, there exists a complementary mechanism for maintaining households through lean times. The Penan go through periods when they need food, were not able to get anything from hunting and fishing, and have no money to buy. They survive by scouting among their relatives and neighbours for assistance and in turn provide assistance when asked and able to provide. While it is virtually impossible to translate such values into econometric terms, it is possible to examine the trends. Table 910 provides an example of the types of trading and assistance that occurs in the longhouse on a regular basis.

Table 910. Items transacted among Penan

<table>
<thead>
<tr>
<th>Items</th>
<th>Bought</th>
<th>Consumed</th>
<th>Given</th>
<th>Total transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>14</td>
<td>132</td>
<td>18</td>
<td>164</td>
</tr>
<tr>
<td>Cassava (leaves or shoots)</td>
<td>0</td>
<td>77</td>
<td>1</td>
<td>78</td>
</tr>
<tr>
<td>Fish</td>
<td>14</td>
<td>37</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Cooking oil</td>
<td>12</td>
<td>0</td>
<td>29</td>
<td>41</td>
</tr>
<tr>
<td>Coffee</td>
<td>1</td>
<td>22</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Chicken</td>
<td>13</td>
<td>2</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Ferns (vegetables)</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Kangkong</td>
<td>0</td>
<td>13</td>
<td>0</td>
<td>13</td>
</tr>
</tbody>
</table>
Table 910 lists all items reported under the categories “bought” (mainly at the local timber camps or (at least once) at Asap); “consumed” (described as having been part of the day’s meals); and “given” (items that the respondent reported as having requested from or given to another household). Again, the warnings of under-reporting are apposite: it is not always easy to remember what one ate today, especially if the meal was standard fare. Obviously, these are overlapping categories (i.e. nobody asks for food except to eat it). There may be a tertiary effect of someone passing on food that s/he had got from another household but the quantities reported were so small (e.g. one or two kongs\(^{35}\) of rice) that they hardly register. The numbers do not overlap across columns: i.e. if someone reported buying rice, that transaction is not subsequently listed as an instance of “consumed” or “given,” unless the respondent had specified that the rice was part of the day’s meals or was given to another person.

This survey was undertaken during November, a time in the agricultural calendar when rice is in short supply. The year 2009 was one where few households planted rice, thus rice was the item most cited, with 14 instances of “buying” and 18 of “giving”. The most common type of transaction seemed to be a household asking another for rice together with cooking oil, MSG, or salt.

The next highest transaction involved cassava, mainly the leaves: the crop most grown by Penan in their fields, and the famine food of choice, apparently. Cassava was reported as part of a meal 77 times (23%). It is also, notably, almost never requested or given, presumably because everyone can get it.

Fish was the next most popular part of a meal, but mentioned only about 10% of the time—an indicator of low fishing yields. Some of the fish was coming from net fishing and others from rod fishing (the latter mostly done by older women). Fish was bought more times than it was sold and only little fish—sometimes one or two—were eaten.

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\(^{35}\) 1 kong = 1 milk tin (approximately 6 fl oz.) = 1 cup
Cooking oil, always necessary for cooking meat and fish, seemed always to be running out and was the item most exchanged among households. Coffee was sometimes reported as the only "meal" of the day (this could have been due to the fact that there was a plentiful supply during the research period and drinking coffee was the most remembered food of the day.) (Two households specified the type of coffee they had: perhaps to indicate they had not taken the researcher's coffee.)

Durians were the most popular items sold with approximately two durians sold for each that is eaten, and often people keeping back the inferior fruits for home consumption. Other fruits seemed to be sold only when someone requested the fruit, otherwise, they were mainly for home consumption. A more detailed description of the transactions for a number of households is included in Appendix Seven.

This discussion shows some of the daily needs of the Penan and provides a glimpse into their daily lives. A bit of money comes in by the day, it is quickly spent on staples and necessities, and any surplus food is shared out to kin and neighbours. This system can perpetuate itself endlessly and in fact has done so. However, one can already see that some households are burdened with more demands than others. For example one household, with an active producer husband, is the most telling example: the more he earns, the more he gives. On the other hand, the inverse is not necessarily true. Another household, with not many resources (only two instances of cash incomes), also gives out food on occasion. People talk about taking "pity" on those in need, but they are also bound by delicate norms of adat\(^\text{36}\) to be generous, even when they themselves are barely keeping afloat.

Only one example of a “freeloading” household was noted: where the husband is renowned throughout the community for a pattern of begging and the record shows that he did not give (or remember giving) anything to anyone. Nor did anyone report (remember) receiving anything from him, even though he continues to secure loans and food from others. In other words, freeloading and parasitism is not punished by ostracism and social exclusion (often the norm among other hunter-gatherer societies).

### 9.4 Household expenditure

The Penan face a number of challenges as the landscape around them changes. Even with their inherent management ethos and concept of molong\(^\text{37}\), settled life has increased the pressure on the forest in the immediate vicinity of the community. The more recent land use changes brought about by logging and conversion to plantation have further affected the ability of the forest to provide the Penan with their day-to-day needs. These changes have forced the Penan to adapt in order to survive and these adaptations include settled agriculture and a shift to a more cash-based economy through employment and trade. The pressure on the forest has also meant that the Penan are coming to rely more and more on items bought or bartered for to meet their daily needs. During the household surveys, data on household expenditures was collected to provide an indication of the economy of the Penan and the degree to which they depend on obtaining their daily necessities through cash or barter trade (Appendix Eight) outlines the main items bought the levels of monthly household expenditures.

The information for household expenditures was gathered during the surveys of each apartment and is based on the respondent’s recall of amounts spent each month on the various items purchased. One percent of the data has been trimmed to remove outliers and to provide a more accurate reflection of the average household expenditures. The extreme data results are probably as a result of the living conditions in many of the communities. As has been outlined, in many of the

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\(^{36}\) Tradition, customs and local tribal laws.

\(^{37}\) To foster the resource for future use.
communities the living conditions are crowded with several households sharing one apartment. Thus, reports for amounts spent may reflect expenditures for extended family and shared resources.

The average household monthly expenditure for all items was reported as RM246 with a median value of RM 132. These figures have to be considered in light of the numbers of households spending on any particular item. Items such as rice, flour, sugar and soap can be considered as core household expenses as most respondents report spending on these items. Other items mentioned are not purchased on a regular basis by all households, and while they constitute expenditures, these items probably do not occur as monthly expenses for all households. Figure 97 provides an illustration of household expenditures for the Murum Penan communities. As a measure of importance, it can be seen that food items (rice, flour and sugar) are purchased by the majority of the households (69 – 96%) and soap (toiletries, toothpaste and other personal items) are purchased by 87% of the households. Tobacco products were noted as a monthly expenditure by 50% of households interviewed and clothes by 40%. Alcohol was mentioned as a monthly expenditure by only 12% of respondents.

Figure 97 Average monthly household expenditures for Murum Penan communities.

The main monthly expenditure incurred by all eight communities is rice. Although the Penan plant hill paddy, the yield is low and seldom lasts more than 5 months, hence the need to purchase rice. The expenditure on rice per household is affected by the size of the household, their rice production and the availability of other carbohydrate food items. The expenditures reported vary between RM10 and over RM250 per month with an average of RM 102 per month and median expenditure of RM80 per month.

The food item that incurs the next highest expenditure is sago flour, as the older generation still prefers sago to rice. Sago flour is an expenditure stated by 70% of the
households in areas where there is no opportunity to extract starch from wild sago.
Expenditure on sago varies between RM10 and over RM250 per month with an
average of about RM29 per month and median of about RM15 per month.

Expenditure on sugar is the third highest in the list of food items with an average
household expenditure of RM19 per month (median = RM15 per month).

A monthly expenditure reported by close to 90% of the households is soap (which
includes toothpaste, toiletries and laundry soap). Each household spends an average
of RM20 on soap with the median expenditure the same amount.

Tobacco was indicated as an average monthly expenditure of RM18 (median RM3)
by only 50% of households. Smoking is ubiquitous, and much of the demand is
probably met by tobacco grown as a crop.

Average expenditure on clothing was stated as RM35 per month by 40% of the
households interviewed. Given that the number of households reporting purchasing
many of these items is generally less than 10%, it is likely that these items are not
purchased every month. The same applies to expenditures on schooling, fuel for
boats and generators, medicine, and alcohol. Only 12% of the household reported
spending on alcohol as a regular monthly expenditure with an average spend of RM6
per month.

Expenses on items such as fuel for running the generators can be quite variable as
fuel is often obtained from the timber camps at no cost. Thus, most households
report spending less than RM 5 per month with the average expenditure reported as
RM1 by 2% of households. Only 10% of the households reported boat fuel as a
monthly expenditure with an average of RM 6 per month.

In general there is little or no regular spending on kitchen or other household items
as indicated by the category labelled torch, radio, batteries kitchen etc. Only 4% of
the households reported any expense on these items. As for school fees and costs
associated with this only 10% of the households interviewed reported this as a
monthly expense with an average of RM6 per household.

The communities of Long Peran and Long Luar had the highest monthly household
expenditures on rice with an average of over RM 140 per household. Long Jek spent
the least (just over RM 40 per household per month). Long Peran households spend
the most per month on flour with an average of just over RM80 (Figure 98).
9.5 Conclusions

All the communities are currently living below subsistence level. In relative terms, their old way of life was seen as far wealthier because the environment was productive, whether or not people planted rice, vegetables, and fruits in cleared fields. Formerly, they had easy access to abundant resources that met their dietary needs and provided products that could be traded or sold. Even after monetisation, well into the 1990s communities such as Long Wat could make a decent living from combining subsistence and commercial production. This does not seem to be possible anymore as the forest resources have diminished and access to the remaining areas is difficult and time consuming. “Goods and products that were once readily available from the forests and rivers have become scarce. Many studies show that people transfer labour to those activities that bring the highest returns for least effort. At some point, yields decline to the level where there is a natural attrition: people just move to some other economic activity with more assured and better payoffs. A question that needs to be asked is; why have Penan remained tied to the hunting-and-gathering economy?

There are significant cultural reasons: dietary preferences, using one’s natural expertise, social expectations, and so on. However, the economic reasons are also rational. There is always hope (based on past experience) of “scoring” something big: days may go by without good returns for the labour and then suddenly there may be a “boom”. This is the classical impetus for selling valuable forest products like gaharu and bezooar stones. The larger reason from comparative studies is that people usually maintain a mixed economy as a risk aversion strategy: if they fail in one area, they can still make it in others. This is what most of the communities are doing. Sources of income and food are coming from wages, allowances, field cultivation, commercial cropping, hunting, fishing, and craft-production. No one source on its own is exactly lucrative, but all combined together they do enable households to sustain themselves through bust periods. It is a flexible, dependable, and familiar (to the Penan) economic system that works.

As stated at the outset, all the community’s economies are cash-poor. Apart from the environment, their major source of capital may be their social ties. As demonstrated in the section on cash transactions, transfers of food occur all the time, everyday in most households. Much of it is in small quantities but (MSG aside) most of it is necessary. On 32 occasions—approximately 10% overall, adjusting for under-reporting—households had to replenish their supplies of rice, more often by asking for a cup or two from other households, and less so, by buying from the shops when they had the cash. For those with bought supplies, some of it will circulate again to other households. Overall, while there is shared poverty, there is also shared wealth.

On the other hand, Penan observations and the record show that they are quite ready for change. Provided they had an abundant environment, they would need less money for food expenses. However, they feel that the environment is no longer productive and in this some feel that the long-term prospects are bleak. Hence, there is a greater interest in monetization and earning regular incomes. It seems that incomes can improve: through job creation and increased work opportunities locally, and improving market prospects for Penan craft products. The emphasis should be on the “local” part. Adventurous young men aside, most Penan overall prefer not to

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38 Sandalwood

39 Stony concretions from the stomachs of certain animals (especially ruminants) that can be sold for use as traditional medicine.

40 Monosodium glutamate
be separated from their relatives. This pattern is especially evident among the community members camping at Asap for the children’s schooling. In addition to the families directly involved in the children’s schooling (i.e., their parents), there is also an extended network of kin (the children’s aunts, uncles, and grandparents). They are there to provide social, emotional, and economic support. Though none of them really like it at Asap, all of them see their stay in Asap as impelled by the children’s schooling, even though not all have children at Asap.

Thus, there is a great need to improve the resource base and develop locally sufficient income-generation activities. Also, as outlined in the demography section, there is a great need to bring the community together again, by providing schools nearby so that people do not need to camp out at Asap most of the year. The Long Wat households at Asap are made up of the community’s more fit, active and energetic men and women in the prime of their productive lives. These are among the most active earners of income through craft-production, hunting, fishing, and day labour. The results of their efforts currently go towards sustaining themselves at Asap rather than returning back to the community via transfers of food and income. Their absence is surely one reason why income levels at Long Wat seem so low.
10 THE GARDEN ECONOMY

10.1 Background on the Farming Zone

Agriculture capability is based on the Department of Agriculture (DOA) Sarawak reconnaissance soil surveys covering the general agriculture capability of the interior including the watersheds of Upper Balui, Linau and Murum; including the Danum and Plieran Rivers (Agriculture Capability Map 8, 1980). The suitable areas in these watersheds are located mainly along the rivers and their tributaries and comprise narrow levees and the adjoining sloping land. The levees are generally flat while the adjoining sloping land has moderate slopes of less than 33 degrees (mainly 12-33 degrees). These areas are generally classified as Class 3 and 4 lands. For the sloping land the main limitations to agriculture are moderately steep slopes and erosion hazard. Along the riverbank, the main limitation is inundation hazard (flashflooding) during the rainy season. The levees (Class 3) are fertile soils for the cultivation of various crops including rice, semi-annuals and fruit trees. The sloping land (Class 4) is generally suitable for shifting cultivation and agriculture in general. Apart from having moderately good land conditions these areas are also important because they are easily accessible by river transport from the respective longhouses.

The extent of the suitable areas (comprising the levee and sloping land) is generally located within a strip about 0.5 to 1.0 km wide on either side of the main rivers such as the Plieran River and the upper Danum River around Long Malim.

Locations of the farms: The past and present shifting cultivation of hill rice at all the villages is carried out mainly along the riverbanks and on the adjoining sloping land. The levees are sufficiently fertile for agriculture due to the regular deposits of silt as a result of periodic flooding. However, the sloping land is only fertile enough to sustain hill rice crop on a rotation cycle of about 10-15 years long. The fact that hill rice farms are established along the levees and moderately sloping land is not at all surprising for the natives of Sarawak including the Penan. Through experience, these people have basic knowledge on what constitutes acceptable land conditions and they only cultivate suitable areas. Thus, it is reasonable to assume that the past and present agricultural activities of the Penan longhouse communities have been essentially confined to the areas classified as Class 3 and 4 land on the agriculture capability maps.

More recently, some farms have been established along the logging roads to make use of the easier access provided by the roads. These areas tend to be located in somewhat steeper terrain with corresponding limitations. Field observations indicate that part of the farm is suitable while other parts, especially the upper slopes, are normally not recommended for farming due to steep slopes and potentially serious soil erosion including land slides.

Distance of farm from longhouse: Hill rice farms are normally established within walking distance from the longhouses or along the riverbanks to enable using small boats as the main transport. Logging has been in the area since the 1980s providing a network of logging roads and tracks, which to a degree have improved accessibility to farm land in the Danum/Plieran areas. As a result, many farms are now being established along the logging tracks at considerably further distances from the longhouse than was previously done. The longer distance (from the longhouse) requires that families construct farm huts where they stay for some days during the farming season. All the dam-affected Penan longhouse communities now practice this type of farming. Some estimates of the distance to the farms are indicated below:

- All the Penan farmers (100%) claim that they walk up to 2 hours to the farms (approximately 5 km)
• The majority (80% of respondents) also claim that they paddle their boats for up to two hours to their farms (longer if going upstream), and perhaps walk for another half hour (this equates to approximately 4 km by boat + 1 km on foot);

• Some Penan farmers (25% of respondents) use their motorized boats for up to one hour to reach their farms (10 km).

These claims are reasonable as the distances indicated do not contradict observations made during the field study when it was noted that farms are generally located anywhere from 3 to 10 km from the respective longhouse (Figure 101).

Figure 101 Hill rice farms are located within the vicinity of the community or along the connecting roads.

Estimated size of farming zone: Based on the information gathered, a general picture regarding the size of farming zone of the longhouse territory could be estimated. The largest farming zone would be under the assumption of (c) and as such the farthest landing point is located either about 10 km upstream of the longhouse or about 10 km downstream. Given that the extent of suitable area is about 1 km wide on either side of the stream; under these situations, the area of the farming zone could be as large as: 20km x 2km, or 40 square km; equivalent to 4,000 hectares.

Based on the Agriculture Capability Map (Map 8) the estimated area recommended as suitable for agriculture is as follows:

• Long Malim (upper Danum river) – 3,800 ha.
• Long Wat (Murum/Danum) – 3,200 ha.
• Long Singu/Long Luar/Long Tangau/Long Menapa (lower Plieran & tributaries) – 12,000 ha
• Long Peran/Long Jek (Seping River) - 4,000 ha

As the majority of the agricultural activities are found within these areas, this could reliably be considered as the farming zone of the Penan communities. The actual size of the longhouse territory would be larger as this would include the hunting and gathering zones, generally located outside of the farming zone.
10.2 Social organisation of farming

10.2.1 Longhouse and individual rights

Longhouse rights: The Penan concept of longhouse territory (Tana Pengurip) is equivalent to the concept of “Pemakai Menua” of the Iban community. In general, each longhouse community recognizes a territory within which the community has gathering and user rights over the resources. However, as noted by Brosius (1987), there is no single well-defined boundary line between each community unless two or more communities are along the same river. In the case of Long Wat and Long Malim there is a recognized boundary that each community respects.

Under the present Sarawak Land Code, which has been amended a number of times since 1974, the Penan have no native customary rights claim to any plot of land unless it was cleared before January 1, 1958. Since the majority of the Penan only started farming in the 1970s Land Code, as amended, does not recognize Penan customary rights to land, which they have inhabited for generations. Nonetheless, the present Penan longhouse communities have established their farms within the respective longhouse territories that they recognise.

The Land Code position with respect to customary rights and the rights to community territory has been challenged. In a recent court case, the Court appears to giving increased recognition to the concept of “Pemakai Menua” (Nor Nyawai Vs Borneo Pulp Plantation SB & Ors, 2001) and that the common law respects the pre-existence of rights under native laws and customs. In addition, the native customary rights do not owe their existence to statutes and so the Sarawak Land Code does not abrogate whatever native customary rights existed before the passing of that legislation. The Penan claim that they have established livelihoods in the Danum/Plieran area as gatherers, hunters and now farmers for generations. Traditionally, their territorial domain is large with a hunting and gathering trip as far as 10 km from the longhouse as normal to them. Taken literally (i.e. a 10 km radius), the area of influence by a longhouse could be as large as 30,000 hectares, especially in areas of flat terrain. The implication of this is that the Penan longhouse territory is substantially larger than presently recognized by the Government under the Land Code.

While, the Penan have been present and had settlements in the Murum / Plieran area for at least 100 years, it is only recently (since the early 70s) that they have begun to engage in rice-based agriculture. Occasionally, at times during this “pre-rice agriculture” period, other ethnic groups occupied areas within the Penan territories. These other groups cleared the primary forests for rice planting and then subsequently left. When the Penan began to establish their own farms they were often clearing the old secondary forests regenerated from the early groups that had moved on. Technically speaking, the present Penan territories have been variously cleared well before January 1, 1958 and the Penan have been present throughout this time. While the Penan may or may not have engaged in the initial clearing, they have not left the area and therefore the stand that they have no customary claims is open to interpretation.

In terms of individual rights; in general, families belonging to a particular longhouse community have the rights to the resources (including establishing a farm) within the longhouse territory. Thus, an individual can only acquire rights to the resources of the longhouse territory (e.g. to farm the land) if he is a member of the longhouse community. However, the right to possess the land is based on the first-feller principle. In other words, the plot belongs to him if he is the first person to cultivate the plot allocated to him.

10.2.2 Allocation of farm plots

In the present community structure, each nuclear household possesses their own land and farm plots, acquired in accordance with the first-feller principle. Each
household knows the exact locations of their various farm plots, which are usually scattered over different sites.

During any farming season a group of households might decide to farm in certain area so that the farms would be adjacent to each other. In this way they could build a cluster of farm huts and stay close to each other. The farms would also be collaborating on pest control and by extension sharing the risks due to pest attacks. Some of the longhouse farms could also be dispersed and the main reason might be just personal preference. For example, one of farmers surveyed at Long Malim cultivated his land where he has few durian trees knowing that the fruiting season is coming. In this way he could visit the farm and collect durian fruits at the same time.

10.2.3 Inheritance of farmland

The fundamental rules of local land inheritance are familiar and common among the Penan communities. According to the respondents, the married children that inherit the original nuclear household also inherit the farmland. The children that split from, or establish their own households would also be given farmland as long as they remain members of the longhouse community. Any newly formed household is allowed to farm and create their own rights within the longhouse territory.

In terms of transferring rights between men and women and between longhouses; if the person is married and he follows his wife and lives in that other longhouse he might forfeit his rights to possess the property of the original household. “Why should I give him if he follows his wife and earns his livelihood in the wife’s longhouse?” said one respondent when asked this question in Long Malim. However, the person in question is allowed to cultivate the plot (of his nuclear household) during any season, or collect any fruits during the fruiting season. But the longhouse community might no longer view him as a resident of their longhouse and he might not have any stake or say in the matters of the original longhouse.

10.3 Farming Seasons

10.4 Agricultural seasons and the Farming Cycle

The agricultural year of the Penan now revolves around the cultivation of hill rice. The year essentially follows that of the neighbouring Kayan and Kenyah communities. The Penan have only become farmers in relatively recent times and as such they do not have an awareness of agriculture seasons engrained in their cultural expression (e.g. planting or harvest festivals). However, they are acutely aware of the farming seasons. In their daily life the Penan often come into contact with neighbouring groups such as the Kayan and Kenyah and from these communities they learn about many things including farming. The Penan also tune into and listen to the Iban radio (RTM). By mid-May the Iban radio normally talks a lot about the rice harvest (Gawai) festival celebrated on 1 June each year. As the actual event is also broadcast live, many Penan would hear the event on their radio. As a result the Penan would be reminded that June is here and it is time to get ready for the coming of a new farming season.

The Penan might not celebrate Gawai Dayak as the other Dayak groups do but they know that the Celebration marks the end of the current season as well as the beginning of the next farming season.

The busiest season is during the period coinciding with land clearing for the new crops, from mid-June to October. The least farm work occurs during the November-January period (prior to harvesting) and in April to early June. First week of June is in fact Gawai Dayak or festival time. For the pagan and Christian alike it is the occasion to thank God for the harvest and prayers for even better harvest in the next farming season.

It was noted that the younger generations are less concerned about ceremonial offerings to gods. The majority of the coming generation does not know much about
ceremonial practice and are in fact Christians and their faith prohibits the continuance of offering.

The farming season among the six communities generally commences in mid-June with harvesting completed by the end of February to mid March. The farming season lasts about 7 to 8 months, but the actual number of days actually utilized to do farm work would be significantly less. The intervening time between planting and harvest is spent, tending the crop, going the forest to hunt, collecting sago and gathering other food items. Generally however, the schedule of farm work is consonant with the general practice of other communities within the locality (e.g. the Kayan and Kenyah Communities). The general activities and farming schedule are outlined in Table 101 and a description of the activities associated with each phase in the Penan yearly farming cycle follow.

Table 101 The Penan agriculture year and food availability.

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**Land Clearing:** Clearing and felling of the forest commences in mid-June and could continue throughout July. This clearing and felling period normally lasts about one month. However, it could also last up to 1.5 months due to delays when the Penan break off (usually after one week of continuous work) to hunt or look for food in the forests. Few of the Penan households have a sufficient stock of food to enable them to work for many days without having to look for food for the family. Thus, the need to frequently go into the forest to look for food becomes one of the main constraints to establishing bigger areas of hill rice.

The farming tools are basic: Long knives such as “parang ilang” are normally used for slashing the undergrowth with axes used to fell trees. Chainsaws are rarely used, as most farmers cannot afford to buy one or to pay for the operation.

After the trees are felled the branches are left un-pruned and the vegetative materials are not stacked. Under this situation, unless there is a sufficiently long period of dry weather, the vegetative materials will not burn completely resulting in less burnt ash to enrich the soil and reducing rice yields.

**Field Burning:** The Penan normally allow their fields to dry up for 15 – 20 days after felling depending on the weather conditions. They know that a sufficiently dry field will have a good burn resulting in the generation of abundant ash that could ensure a good rice crop. Field burning is normally carried out in late August to early September period.

Provided the field is well dried, burning only takes one day. However, if the field were not well burnt due to bad weather, there would generally be a secondary burning activity over about a two-week period, usually in early September. This secondary or
follow-up burning is aimed to clear up the field so that most of the land could be sowed. Pockets of unburned areas would not be sowed with seed, as there would be poor germination.

\textit{Sowing}: Sowing the field is carried out in September and might take more than a week if it is carried out by an individual household. During sowing, the Penan work in groups of 4-5 households and each group might take a few days to sow the whole field. The respondents estimate that they used about 20-30 kg of rice seeds. A seeding rate of 30kg is about the normal seeding rate for 0.6 ha provided that the seed quality is good (90\% germination).

\textit{Field maintenance}: There is little weeding of the growing crop and virtually no application of additional fertilisers. Fertilizer input relies on the ash from the initial vegetation burn. The use of pesticides to combat pests is also very uncommon. The communities receive no subsidies from the Department of Agriculture (DOA) and as a result the farmers cannot afford to buy the expensive agrochemicals.

\textit{Harvesting}: Harvesting commences in February and is normally completed by mid-March. The family (husband, wife and older children) usually harvest the field together. Harvested paddy stalks are kept in the farm hut or carried back to the rice store at the longhouse. Occasionally among some farmers, they only harvest sufficient quantity to last for few days to a week. They will harvest again when the rice is exhausted. While this practice negates the need of a storage hut, it also normally results in significant losses, especially during a season of good harvest. The losses result from the rice falling or being blown off the stalks or being eaten by animals.

\textit{Rice Yields}: Without field maintenance the yield from Penan farm depends very much upon the mercy of nature. During a bad season there is often nothing to harvest. The rice yield in a good season averages about 10 bags (50kg/bag) from a 0.6 ha field. Using a 60\% conversion rate, this yields about 300 kg of rice. Assuming rice consumption is about 12.5kg/person/mth, this level of harvest can last a person only 24 months, or roughly 4 months for an average Penan household. Given good seed stock, proper land preparation, sufficient fertilizer inputs and good pest control the rice yields could alone be improved (at least doubled).

\textit{Collection of Other Food Crops}: The Penan will continue to visit their farms after harvesting to collect tapioca, potatoes and yam, especially if their rice supply is exhausted. In the event their rice supply is exhausted they will survive on tapioca, potatoes and yam, and later in the year on sago (from wild sago palm collected or purchased). Planted banana also provides another useful contingency food crop. According to the respondents interviewed tapioca and other food crops might be required to sustain the community for another 3 to 4 months.

10.5 Disposition of households towards gardening

10.5.1 Importance to kinship, social and economic life

The Penan from the communities of Long Singu, Long Tangau, Long Luar and Long Menapa currently live and work together. Penan from these four longhouses have the same family roots and continue to maintain close family relationships between the communities. They also share hill rice seeds and even help one another with farming activities.

On the other hand, Penan from Long Wat and Long Malim do not appear to mix with the Plieran communities but claim that they are good neighbours with many sharing common family roots. While, it is not uncommon for Penan from Long Wat to obtain rice paddy seeds from Long Malim, these two longhouses seem reluctant to live together with the other longhouses of the Plieran River.

All six longhouses share the common view that hill rice farming is already part of their socio-economic way of life. The people of Long Malim for example, have learned
substantially about rice farming from their Kenyah Badeng neighbours. The Kenyah Badeng have traditionally established large farms and as a result seldom suffer from rice shortages and the need to search for wild sago. In fact, the Kenyah often contribute rice to those Penan families in great need. There is no doubt that the Kenyah do influence some Penan households. It was noted that one Long Malim farmer had a good harvest during the farming season included in this study (March 2010). The farmer claimed that his family (4 members) had sufficient supply of rice to last through to November (approximately eight months or the equivalent of about 400 kg of rice).

The normal situation in the Penan communities at present is a production of approximately 240 kg of rice, which is only able to last four to five months or up to June for a family of four members (the average size of Penan households). Even the farmer with the good production would not have enough rice to last the entire year. When the rice supply is exhausted the family would then resort to eating tapioca roots that seem to grow well over the entire rice field. He also responded that he would not resort to travelling to the forest to obtain wild sago. At present, this exercise requires travelling deep into the jungle for at least for one week to secure about 30 kg of sago starch (smoked weight) that could only feed his family for only 10 days.

One of the key factors for success in farming is the location of the farm. Farms located closer to the longhouse (within 1 km) are easier to monitor and maintain over the crop cycle and as a result, the family also has more time to make larger farms (1 ha) thereby increasing the production potential.

10.5.2 Preferred farm locations

The preferred farm locations are the flat alluvial areas along the riverbanks and the adjoining moderately sloping land. Alluvial areas have fertile soils that should ensure good crops while the moderately sloping land, is easier to cultivate than the steeper areas and has acceptable soil fertility. In addition, these two landforms could sustain two years consecutive cropping if the farmer decides to farm the same field again in the following season.

As with all native farmers, the Penan have good knowledge in choosing land to cultivate. They know that land with the lush vegetative growth characterized by the alluvial areas is fertile land. They do not farm sandy areas because sand is an indicator of poor soils. Nor do they farm steep slopes because the field under such limitation is difficult to cultivate and manage.

10.5.3 Distribution of farms and distance

The majority (>95%) of Penan households establish only one plot of hill rice during each farming season. If a second farm is established the plot would be located in different area to minimize risks associated with events such as flash flooding. While the preference is for the river areas and the moderate slopes, presently some farms are located even on the steep slopes along the logging roads. The determining criterion is good accessibility.

The majority of the farms are located between one to two hours walking distance from the village (5 km). Otherwise, if river transport is used the farms could be located one to two hours by paddling (5 km), or up to one hour by motorized boat (5 – 10 km).

Where the fields are located a considerable distance from (>5 km) the longhouse the farmers construct farm huts. Thus instead of commuting to the farm frequently or on a daily basis, they stay at the farms for days. In this way some of the farmers could do more work at the farms especially during the harvesting season. In addition, staying at the farm enables them to better protect the farms from animal pests by scaring the animal away and trapping some of the animal pests especially porcupines and monkeys. The Penan normally consume the wild animals they catch.
The farms are generally referred to based on their location, normally using the name or the characteristic of a nearby stream (e.g. “Lubuk” (deep section of a river), “Tanjong” (bend of a river), with reference to a big tree (e.g. a tapang tree41), a prominent hill or logging camp/road.

10.5.4 Abandonment of farms
Once clearing commences the Penan do not normally abandon their fields until after harvest. However, in the past there were cases when farm sites were abandoned due to superstitions. For example, when they heard a sound of dead tree trunk falling on the first day of undergrowth clearing it was considered a bad omen. The immediate response was to abandon the site and look for a new one. The sounds of certain birds were also considered as warnings of bad omens. However, these superstitions are fast disappearing as the younger generation do not know about the omens and/or now practice the Christian faith. Hill rice farms are generally only farmed for one year with a new area being opened for the next year’s crop.

10.5.5 Non-farming households
In 2009 most of the Long Wat households did not establish rice fields because they had no seed to plant due to total crop failure in 2008. Furthermore, they could not obtain seeds from Penan farmers of other longhouses (as most were in a similar situation) nor did they receive any assistance from any of the relevant government departments. Additionally, some 20 households from Long Wat have not been farming as they have temporarily relocated to the Asap Resettlement Scheme in order to be close to their children who are schooling there. These households instead work as labourers to earn daily wages to support themselves.

In general less than 10% of the households from the six longhouses (less than 30 of about 300 households) claim that they do not establish rice paddy fields during some seasons. The main reason given for not being able to plant rice was the lack of seeds to plant, staying away from the longhouses, preference for hunting and gathering of jungle produce, earning wages and ill health and old age. Thus, rice planting and farming is very much a significant part of the livelihood strategy for the Wester Penan.

10.6 Farm Size, Number of Plot and Land Ownership
Farm size generally ranges from 0.4 to 0.8 hectare (ha) averaging about 0.6 ha per family with the majority (97%) of the Penan farmers establishing only one plot per season. Only a few farmers claim to normally establish 2 plots each season, or during some seasons.

Most farmlands are sited along a narrow alluvial plain of main rivers and on the moderately sloping land. The alluvial plain has deep clay-to-clay loam soils, which are generally fertile due to regular floods that deposit rich sediments. This land is rated as subclass 3ie42 with the main limitations to agriculture being flooding or inundation risks (i) and the risk of riverbank erosion (e).

The sloping land is mainly comprised of clay soils ranging from 50 cm to 100 cm deep with the majority classified as subclass 3te and 4te lands. In subclass 3te, the main limitations to agriculture are moderate erosion hazard and moderate slopes (<25 degrees). Subclass 4te is marginal land with serious erosion problems and steep slopes (25-33 degrees). The utilization of this marginal land requires the implementation of various conservation measures in order to conserve the soils’ conditions. In other words, management cost is much greater.

41 Koompasia excelsa

42 Based on the Sarawak Soil Capability Classification, Department of Agriculture.
With the accessibility provided by the logging roads, several farms were recently established along the logging roads where the land is classified as marginal at best. On this steep slope land, erosion is a big problem and if such plots were to be farmed for successive years, erosion would surely denude the land of the fertile surface soils. Once, gone, it will take decades, if indeed at all, to restore the soil to the original conditions.

In any case, the Penan seldom farm their plots over two consecutive years. They practice a 10 to 15 year rotation period, which gives sufficient time for natural regeneration of soil fertility.

Given the length of 10 to 15 year rotation period, the original household would require no less than 6-8 hectares of land under hill rice cultivation. In addition many of the households have also fruit trees. This implies that each household farms 10 or more hectares of land.

Land ownership is based on the first tree feller concept (i.e. the first person to clear the land has the right to claim ownership to such land). The first feller might be clearing primary forest or old secondary forest left after the initial clearing by earlier farmers who no longer reside in the area. Whatever the vegetation condition might be, the first person to clear the area has automatic claim to ownership of that plot while they remain farming the land. This is also linked to their concept of Molong, which was outlined in section 2.4.

10.7 Crops Cultivated

10.7.1 Staple, subsistent and preferred crops

The main crop cultivated by all communities is hill rice. Rice now constitutes their staple food with tapioca planted as secondary staple foods for use in times of rice shortage. In some farms during the 2009 season, the entire field was planted with tapioca, usually in October to November. When the rice supply is exhausted the tapioca is ready to be harvested, generally six months after planting (commencing from May). Other subsistence crops such as local potatoes and yam are also cultivated usually around the farm hut and on the lower slopes. Many farmers also grow a variety of vegetables including maize, pumpkin, cucumber, “terong Dayak” and others depending on the types of vegetable seeds available to them (Figure 103). Semi-perennial crops comprise mainly banana, pineapples and sugarcane.

The practice of mixed cropping, especially of food crops, is a deliberate strategy to ensure some supply of food after their rice stocks have been exhausted. In Long Wat a few farmers commented that they do not normally intercrop vegetables with the hill rice because they rely on the collection of jungle vegetables.

The planting of tobacco, mainly for self-consumption, is also common and the majority of Penan (men and women, young and old) smoke heavily.

Most of the households interviewed also own fruit trees with the most common being: durian, rambutan, pulasan, terap, jackfruit and mata kucing. Some of these trees (e.g. durian) are inherited while other more common fruits such as rambutan are planted. However, compared to other farming communities in Sarawak (e.g. the Kenyah Badeng at Long Malim) the planting of fruit trees among the Penan communities is minimal.
Figure 103 Hill rice is the main staple and is inter-cropped with tapioca and maize.

10.7.2 Cash Crops and other profitable crops
The planting of cash crops is almost non-existent among the six longhouses. There is some cocoa being grown at Long Wat, but the garden has been virtually abandoned. The Penan community in general have a very poor comprehension of what are the most profitable crops. When asked, they expressed the following opinions about oil palm and rubber: “We do see and have heard about oil palm and rubber, but we cannot say they are profitable crops to plant because we have never planted these crops. If people can teach us to plant these crops we will do so”. One of the main problems is access to markets and the lack of transport to get crops to the market. In season, Long Wat sells durian to the surrounding timber camps. However the cost of transport and the difficulties in getting these fruits to other markets further afield renders this crop as uneconomical. Until these logistical problems can be overcome, it will be very difficult to establish cash crop farming for the Penan.

10.8 Crop Pests
The pests that attack Penan farms are similar to those faced by all rural farmers including the Kayan and Kenyah. However, the animal pests tend to be a more serious problem because the Penan farms are located mainly in the vicinity of the forests.

Rice crops are often ravaged during the first two months of germination by armyworms and then later during the growing period and the panicle initiation period by leafhoppers, leaf suckers and stem borers. Bugs attacks occur especially during the milky stage of grain formation. Animal attacks are also common during the growing to harvesting stage. These animals include wild boars, monkeys, porcupines and the deer. Damages to the maturing rice grains could also be serious with the main culprit being small birds, especially the munia or “burung pipit” (*Lonchura sp.*).

The animal pests attack not only the rice crops, but other crops as well and thus present a direct threat to farm viability.

Pest controls are generally minimal especially for damage caused by insects. The farmers simply cannot afford the expensive pesticides, even if these chemicals were
available locally. However, the farmers do have some measures of control over the animal pests. They use shotguns, set traps to catch the animals and scare them away. Any animals caught are either consumed or sold to the timber camps.

The Penan estimate that the loss of yield due to the various pests outlined could be as high as 100% especially during serious infestation. For example, in 2005 the Kenyah Badeng of Long Malim suffered 100% losses mainly due to the attack by armyworms in the two months after sowing (during the seedling stage). In 2008 Long Wat also suffered from total crop failure due to the same attack by armyworms. Generally, however, the respondents commented that losses of 30%-50% were considered normal.

10.9 Source and quality of Seed stock

The Penan farmers obtain rice seeds from the following sources:
- Seeds from previous crops – (about 30% of respondents);
- Seeds bought from other individuals or other communities (30%); and
- Seeds acquired by exchange with other individuals or communities (40%).

The respondents from all communities claimed that they never received seeds from the Department of Agriculture (except in 1996 for Long Wat). In term of quality, the participants in dialogue sessions indicated that the DOA seeds were appreciably better than other sources, mentioned above. Ideally, the Penan should reserve 10%-15% (30kg) of the harvest as seeds for the next farming season assuming that the farm size remains 0.6ha. This, however, is often difficult due to the general shortage of rice for food.

10.10 Organisation of Labour and Beliefs

Group Effort: In carrying out the more demanding/urgent tasks such as land clearing and sowing, the Penan generally work in a groups of 4-5 households that are commonly related to each other. They take turns to carry out the tasks on each other’s farm. This sharing of work and working together makes even difficult tasks easier to accomplish.

General labour organization: Individual families (e.g. husband and wife together including their children) normally undertake the less physically demanding tasks. These tasks include field burning, planting and harvesting of tapioca, planting of vegetable seeds, field maintenance, harvesting, thrashing paddy stalks and carrying paddy to the longhouse. Men do, however, carry out certain specific tasks such as trapping of animal pests, building of farm huts and storehouses. Likewise the women have certain duties such as cooking, bringing water to the field, and collecting vegetables. In most other Sarawak Dayak communities, the activity of pounding of rice is exclusive to the woman, but in the Penan longhouse it is common to see the men helping with the task.

Beliefs: Many of the Penan households in the six communities have become Christian and do not know much about or generally abstain from the practice of traditional rituals associated with farming. However, some older people who still cling to animistic beliefs do conduct ritual ceremonies prior to initial clearing, prior to sowing the crop and at the commencement of harvesting.

As the Penan are relatively new in agriculture, they do not have a cultural tradition of farming related ritual. Thus, there is not a complex set of farming rituals, as the younger generation either do not know how to conduct the ritual or have become Christians. While there may be few rituals associated with agriculture, they do have ritual associated with the forest and claim that the rituals wrongly conducted might incur the wrath of unhappy evil spirits that could bring curses or destruction to the farm. The Christians (e.g. both Kenyah and Penan at Long Malim and Long Singu) experience that prayers are more convenient, expedient and effective
10.11 Storage and consumption of produce
All respondents (100%) claimed that staple/subsistent food crops such as rice, tapioca, and yam are consumed immediately after harvesting. When available, surplus rice is stored for later consumption. Tapioca, banana, and yam might also be used for barter trading with the timber camp employees in the vicinity of the community or sold for cash.

The community use a few methods to store their harvested rice:
- 71% of the respondents use polypropylene bags (fertilizer bags) to store harvested rice and kept the bags in their longhouse rooms,
- Some keep the bags in special huts normally located on the farm premises or in the vicinity of the long house.
- Only a small number use traditional storage comprising cylindrical containers, or “tibang” made from the bark of certain tree. When used, the tibang is installed inside the storage hut.

Some 56% of the respondents claimed to often share food items (rice, tapioca and banana) with close relatives who have little food to consume.

10.12 Farm Income
When cash is urgently needed 23% of respondents indicated that they would sell or barter-trade their farm produce. They would use the cash to buy basic food items such as sugar, salt, instant noodle, monosodium glutamate and tinned food. They claim that their children like instant noodles while they enjoy eating certain types of tinned food. The desire for these alternative food items is, to a certain extent, driving this trade.

The produce they most often traded in the longhouse includes tapioca (19%), banana, vegetables and even wild sago. These products are mostly sold to the nearby timber camps. Only 13% of the respondents claimed that they traded with outside traders. Within the longhouse there is a continual trade involving food items. This informal longhouse trade has been covered in more detail in Section 9.3.1.

The typical purchase prices for farm produce (the Farm gate price of the Produce) are outlined below:
- Rice RM1.50/kg
- Tapioca RM0.50/kg
- Yam RM0.50/kg
- Potato RM0.50/kg
- Vegetables RM2.00/kg
- Banana RM0.30/kg

On average the value of crops per households is estimated as follow:
- 300 kg of Rice @RM4.00 =RM1,200/season
- 700 kg of tapioca @RM0.50/kg =RM350.00
- Vegetables (Miscellaneous) =RM300.00

Thus, household “income” (i.e. what they would have to spend on replacement goods) derived from crops is about RM1850/yr, or RM154/mth. This figure does not include the value of wild sago they collect which is estimated to be about 240 kg per household to supplement their carbohydrate need for 4 months (October to January). The replacement cost for wild sago is RM5.00/kg. Thus, there is an additional value/income of RM1,200 per household.
In terms of the value of the produce, 36% of the respondents claimed that they earned about RM600 per year by selling farm produce. However, the majority do not know how much they earn, if they earn anything at all. This farm income might account up to 30% to 50% of the total household cash income per year.

10.13 Food Security

On average the Penan communities experienced two serious crop failures for every five planting seasons. Compounding this problem is that many households are not farming during the season following the crop failure due to the lack of seed stock for planting.

Hill rice crop failures are mainly due to diseases and pest attacks. The low production is due to poor seed stock, minimal crop maintenance such as weeding and pest protection, and zero use of agrochemical inputs (such as pesticides and fertilizers). The relatively small farm plot size is also another factor why the Penan do not produce sufficient rice for self-sufficiency.

Virtually all households do not produce rice in sufficient quantities to cater for household consumption needs in any farming season. For the majority of the households, rice stocks only last until June or July (i.e. only about 4 months after the completion of harvesting in February to mid-March). The households then depend upon tapioca root, which could be harvested by July (approximately 7 months after planting in October-November). In Long Malim one of the farms visited had a good crop of tapioca planted throughout a field of about 1.5 acres (0.6 ha). The spacing was generally about 3 m x 3 m giving about 700 points. According to the farmer the yield varies from 1 to 3 kg per plant. With an average of 2kg/plant the total potential yield is estimated at 1,400 kg. Assuming losses due to pests amounting to 50%, the balance for harvest would be 700kg. Assuming a consumption rate of about 5kg/day for an average household, the tapioca stock can only last for about 4 months (provided no produce is not sold, which is not always the case).

When the tapioca runs out the Penan generally resort to sago starch to bridge the next 4 months until the next harvest. An average household would consume about 2kg/day, or 240kg over a four month-period. Sago could be purchased at the camp at RM5/kg or be collected from wild sago palms growing in the forest.

In the absence of cash the only option is for the household to go to the jungle to collect sago palm. Usually, a group of 3 to 4 households (husband and wife teams) go into the jungle for at least a week. The amount of smoked sago this size group could obtain during a trip is about 40kg per household. However, this amount of sago supply could support an average household for only 20 days and each household would need to make 6 trips to the jungle to get sufficient wild sago for the family until the next harvest.

In addition to the core food security strategies outlined above, the Penan also depend upon the following:

- Maintenance of other crops such as banana, which are available all year round.
- Hunting wild animals and gathering edible forest products for self-consumption and sale to nearby timber camps.
- Earn income for buying food by making and sell handicrafts such parang, rattan mats and baskets.
- Government aid under the Disaster Relief Fund. In 2009 each family received 60 kg of rice.
- Assistance from NGOs and church groups.
- Assistance from the headman who might request the timber camp to provide food items.
10.14 Outside assistance
The Penan longhouse communities claim that since 2005, the community has never received any assistance or services from either the Government or NGOs. This has left them the impression that they are just insignificant in the power equation and easily forgotten. Given their remoteness and the difficulty and expense to visit them regularly, this sentiment is understandable. The respondents expressed a desire for assistance for the following:

- Rice Seed stock and Agrochemicals;
- Fruit seedlings;
- Extension Services;
- Foodstuff and support during crop failure; and
- Shotguns.

In 2009, under the newly announced Government programme to subsidise rice to the poor, each household received a total of 60 kg of rice from the Government.

10.15 Animal rearing
The Penan do not rear any livestock such as pig, goat, cow or sheep. Some households do keep domestic chickens on a free-range basis but this has not been overly successful as the domestic chickens are often wiped out due to disease. At present, the Penan have very little experience with animal husbandry.
11 THE FOREST ECONOMY

11.1 The social organisation of forest resources

11.1.1 Longhouse forest territory

The Penan has a concept of longhouse territory (Tana Pengurip) has two general zones: the farming zone and the hunting and gathering zone. The farming zone is an area where farms are established and where most fruit trees are to be found. This zone is characterized by flat to moderately steep terrain, more suitable soils for agriculture and is considered as the inner zone of the territory as this zone is generally situated closer to the longhouse. Hunting and gathering of jungle produce are also carried out in this zone.

The hunting and gathering zone is the wider area beyond the farming zone where the longhouse community gather jungle forest products and hunt wild animals. This area extends well beyond the community farms in all directions. The evidence for the Penan use of these areas is in the Penan encyclopaedic knowledge of the rivers and landforms of the area (Figure 61). The farms are not normally established inside this area. In the Danum and Plieran valleys, this wider area is characterized by steep terrain, less suitable soils (for agriculture), and is considered as the outer zone of the territory sited further away from the longhouse settlement.

As outlined previously, under the present Sarawak Land Code the Penan native customary rights claims in both zones are not recognised. However, recent Court decisions on the extent of “Pemakai Menua” (the equivalent of Penan Tana Pengurip) provide a basis for estimating the Penan community land areas43.

11.1.2 Individual rights over land and fruit trees

Distinct community territories (including the farming and hunting-gathering zones) are recognized between the Penan communities and in general, only the family that belongs to that longhouse community could exploit the resources within that territory. The right to possess certain forest resources (e.g. wild durian trees) generally follows the “first-finder /marker” principle. In other words, the resource belongs to the first person finding and marking the resource in the forest (Figure 111).

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43 “Pemakai Menua” = half a day’s walk (10 km) from the settlement (Nor Nyawai Vs Borneo Pulp Plantation SB & Ors, 2001)
Figure 111 Rivers provide access to forest resources throughout a community’s territory.

11.1.3 Allocation of forest resources
In general forest resources are not allocated to any individual in the same manner as the allocations of land for farming. The freedom to hunt and gather in the forest is part and parcel of way of life in Penan society. Inheritance or ownership of general forest resources is not the norm unless specific resource such as a durian tree already belonging to the forefather. The forest is viewed as a resource for all to use and while usufruct can be claimed through molong there is an obligation to the community to share and to ensure that the resources are preserved for the future.

11.2 Hunting and gathering
The communities view the forest as a significant provider of edible products as well as cash-generating products. The role of the head of the household as the main provider for the family is very prominent in the Penan community. The head of the household is the individual who most frequently goes to the jungle to hunt wild animals, and to gather and collect jungle products.

During household interviews, the respondents indicated that the head of house is involved in the carrying out the following forest activities:

- Hunting for wild animals (95% of respondents)
- Collecting Jungle produce (92% of respondents)
- Collect and Processing Sago (86% of respondents)
- Collecting Rattan (81% of respondents)
- Collecting Herbs (49% of respondents)
- Collecting Sago Grubs (76% of respondents)
- Hunting or trapping Wild Birds (81% of respondents)
- Other activities such as fishing, making boats (38% of respondents)

The head of household is assisted (by his wife) for activities less physically demanding such as collecting jungle produce (49%), collecting and processing sago
(68%) and fishing (23%). With respect to the collection and processing of sago, 17% of the respondents indicated that this activity involves all members of the household.

For the more physically demanding activities such as hunting and collecting rattan, the mature sons (23%) and the son-in-law (3%) assist the head of household.

Collection of medicinal herbs, involves the more experienced elders, namely the grandfather (17%) and the grandmother (14%) accompanying the head of the household.

Family members who are too old or debilitated (e.g., the grandfather (6%) and grandmother (20%) and young children (37%)) are not involved in forest exploitation activities.

The head of household (89%) is most frequent member to gather and collect forest produce, followed by the matured sons (14%), the wife (11%).

11.3 Forest Mammals

11.3.1 Mammals hunted by the Penan

The forest mammals are of significantly important to the Penan communities, especially in the context of providing protein sources and for generating cash income.

Mammals are hunted throughout the year, but are generally most abundant during the fruiting season when hunting is made easier. The most common hunting method at present is using shotguns to kill the animals. Other methods include using hunting dogs, spear and traps.

All the mammal species are becoming more and more difficult to find although wild boar and macaques are still considered available and easier to hunt especially during the fruiting season. The other smaller animals considered available include porcupines and mouse deer. Gibbons, a species typical of intact rainforest, are now considered a very rare species to encounter.

The survey revealed that the following mammals are most significant to the Penan (Table 111).

Table 111 Mammals hunted by Penan and their relative importance.

<table>
<thead>
<tr>
<th>Mammal Species</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild boar (Sus barbatus) (Babi Hutan)</td>
<td>100%</td>
</tr>
<tr>
<td>Sambar deer (Cervus unicolor) (Rusa)</td>
<td>100%</td>
</tr>
<tr>
<td>Barking deer (Muntiacus sp.) (Kijang)</td>
<td>100%</td>
</tr>
<tr>
<td>Mouse deer (Tragulus kanchil) (Pelandok)</td>
<td>17%</td>
</tr>
<tr>
<td>Honey bears (Urus malayanus) (Jugam)</td>
<td>29%</td>
</tr>
<tr>
<td>Porcupine (Hystrix sp.) (Landak)</td>
<td>29%</td>
</tr>
<tr>
<td>Pangolin (Manis javanica) (Tengiling)</td>
<td>49%</td>
</tr>
</tbody>
</table>

**Wild Boar**

Availability: The meat that the Penan preferred most is the boar meat. Wild boar yields substantial amount of meat, which is tasty, and also high amount of fat. Hunting wild boar is thus the most common type of game procured.

The boars may be abundant during certain periods and then disappear during other periods. This is because the boars are highly mobile and travel great distances in search of food both on daily basis and seasonally. As a result there is normally no stable boar population in any given area. While the boar population appears to have declined, the informants claimed that the boars are generally available through out
the year in all longhouse territories under study. This partly because during the non-fruiting season the pigs feed on variety of items such as worms and grubs, seeds, acorns of *Fagaceae* species, farm crops such as tapioca and potatoes, and now also on oil palm fruits.

**Seasonality:** The pigs usually migrate to any given area where there are abundant fruits. Thus, in any given territory, the boar population is most abundant during the fruiting seasons, which usually last from September to December. This migratory movement to any given area occurs annually. Pigs that feast on fruits grow fat very fast and the Penan generally prefer to kill the pigs that are sufficiently fat. While the meat is eaten to provide dietary protein, fat is consumed for energy as well as to flavour other food items such as sago starch, tapioca, palm shoots.

**Stewardship:** Traditionally, the Penan killed no more pigs than were required for the consumption of the community for one to two days. Small pigs were often spared and sometimes the mothering so that the piglets could continue to suckle and grow. When a pig was killed, it was usually consumed that evening or as long as it took until the whole pig was finished. In the absence of facilities to preserve the meat for consumption at a later date it was necessary to consume the meat lest it perish. Traditionally, the Penan would hunt on average every other day as they consumed their kills quickly. However, now the tradition of sharing the kill is quickly eroding. It is common that the hunter brings his kill directly to the timber camp to sell the meat for cash. He will most probably retain only certain parts of the pig such as the head, internal parts and the legs and bring these back to his family/clan. Bringing the kill directly to the workers at timber camp and the site office of the oil palm plantation is possible because of the existence of extensive networks of roads in the Danum/ Plieran area. The price for the meat is usually in the range of RM5 to RM8 per kg.

**Monkeys**

Other mammals mentioned during the interviews include Pig-tailed macaque (*Macaca nemestrina*) (Nyumboh), Long-tailed macaque (*Macaca fascicularis*) (Kera’), and Borneon Gibbon (*Hylobates muelleri*) (Empiliau/Bangat).

Traditionally, the Penan did not set out to hunt either the pig-tailed macaque or the long-tailed macaque (Macaca fascicularis) (Kera). Neither of these two species was preferred, although they did express a like for the taste of the leaf monkey (*Presbytis* sp.). These days however, the Penan do kill the macaque and consume the meat.

The macaques are generally considered as nuisance animals that destroy their farm crops such as hill paddy, tapioca and any other planted crops. Thus, these animals are more easily encountered during the farming season especially during the period of October to January. Macaques are ingenious, difficult to scare away and may even intimidate a person visiting his farm especially if the person shows no sign of carrying a weapon such as a gun (or a stick that looks like a gun). The Penan will shoot the macaque when they have the opportunity or at least scare the animals away from his farm. The other commonly used method for capture is to set a trap to catch the animal. All macaque caught are normally consumed by the household members. Generally, it is anticipated that the consumption of meat (of any animal) by the Penan in future would be limited by supply rather than their cultural values and preference. In other words, the Penan cannot be choosy but consume whatever meat would be available and required for their protein needs.

**Other mammals**

The second favourite meat of the Penan is the meat from Sambar deer and barking deer. These are important mammals for the supply of protein for the family as well as for bringing in significant income to the Penan community. They also like the meat of porcupines, pangolin and civets. In general, these animals are more easily encountered during the fruiting season, but overall their respective populations have markedly declined in all longhouse territories. Today, these animals are difficult to hunt.
Value of wild meat

For mammals such as wild boar, sambar and barking deer, the meat is often sold for cash. However, the heads and the viscera are normally retained for family consumption.

Using group discussions, information regarding estimates of wild animals caught and their respective monetary value was gathered. The results of these discussions are summarised in Table 112 providing an estimate of the annual forest resources consumed by a longhouse community (50 households). The price adopted in the estimation is the replacement cost for the protein consumed. Presently, the Penan will buy meat locally if they fail to catch wild animals as source of dietary protein. The average cost is RM8.00/kg of meat (chicken, wild animal, or fish origin). For example, on average a Penan longhouse community would catch 170 head of wild boar per year with a total weight of 6,800 kg. Using an average price of RM8.00/kg the estimated replacement cost for this protein source alone would be RM54,400 per year.

Table 112 Replacement Value of Protein from Wildlife for 50 households (@RM8.00 / kg).

<table>
<thead>
<tr>
<th>Species</th>
<th>No. Heads per year</th>
<th>Weight in (kg) per head</th>
<th>Total Weight in (kg)</th>
<th>Estimated protein replacement value per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild Boar</td>
<td>170</td>
<td>40</td>
<td>6800</td>
<td>54,400</td>
</tr>
<tr>
<td>Sambar Deer</td>
<td>10</td>
<td>55</td>
<td>550</td>
<td>4,400</td>
</tr>
<tr>
<td>Barking Deer</td>
<td>15</td>
<td>25</td>
<td>375</td>
<td>3,000</td>
</tr>
<tr>
<td>Mouse Deer</td>
<td>35</td>
<td>3</td>
<td>105</td>
<td>840</td>
</tr>
<tr>
<td>Porcupine</td>
<td>6</td>
<td>6</td>
<td>36</td>
<td>288</td>
</tr>
<tr>
<td>Pangolin</td>
<td>6</td>
<td>8</td>
<td>48</td>
<td>384</td>
</tr>
<tr>
<td>Pig-tail Macaque</td>
<td>10</td>
<td>20</td>
<td>200</td>
<td>1,600</td>
</tr>
<tr>
<td>Long-tailed Macaque</td>
<td>15</td>
<td>3</td>
<td>45</td>
<td>360</td>
</tr>
<tr>
<td>Civet</td>
<td>6</td>
<td>3</td>
<td>18</td>
<td>144</td>
</tr>
<tr>
<td>Borneon Gibbon</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>72</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td><strong>8186</strong></td>
<td><strong>65,488</strong></td>
</tr>
<tr>
<td>Wild Pigeon</td>
<td>200</td>
<td>0.25</td>
<td>50</td>
<td>400</td>
</tr>
<tr>
<td>Hornbill sp.</td>
<td>5</td>
<td>4</td>
<td>20</td>
<td>160</td>
</tr>
<tr>
<td>Wild fowl</td>
<td>25</td>
<td>1</td>
<td>25</td>
<td>200</td>
</tr>
<tr>
<td>Quail</td>
<td>2500</td>
<td>0.25</td>
<td>625</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td><strong>720</strong></td>
<td><strong>5,760</strong></td>
</tr>
<tr>
<td>Monitor Lizard</td>
<td>6</td>
<td>5</td>
<td>30</td>
<td>240</td>
</tr>
<tr>
<td>Turtle</td>
<td>10</td>
<td>7</td>
<td>70</td>
<td>560</td>
</tr>
<tr>
<td>Tortoise</td>
<td>30</td>
<td>4</td>
<td>120</td>
<td>960</td>
</tr>
<tr>
<td>Frogs</td>
<td>360</td>
<td>0.1</td>
<td>36</td>
<td>288</td>
</tr>
<tr>
<td>Python</td>
<td>5</td>
<td>8</td>
<td>40</td>
<td>320</td>
</tr>
<tr>
<td>Sago grubs</td>
<td>48,000</td>
<td>0.01</td>
<td>480</td>
<td>3,840</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td><strong>776</strong></td>
<td><strong>6,208</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>9682</strong></td>
<td><strong>77,456</strong></td>
</tr>
</tbody>
</table>

In addition to the meat and viscera of the wild animals, other specific parts of the mammals’ body are of economic significance. Some these animal parts include:

- Wild boar tusks – the canine teeth of the wild boar are of ornamental value.
Honey bear - the claws of the bear are of ornamental value to the Penan as well as other Dayak communities. The gall bladder is of medicinal value for the traditional treatment of Asthma. The gall bladder is smoked dry and can fetch a price of RM100 or more per piece. This is not a significant source of income as honey bears are rarely caught and the informants reported that one would be lucky to catch one bear in five years.

Porcupine - the quills of porcupine have some medicinal uses in Chinese medicine shops. The most valuable parts of the porcupine are the gallstones or the kidney stones, if present in some porcupine. Each gallstone or kidney stone can fetch a price of a few hundred Ringgits per piece. Both gallstones and kidney stones are rare to find occurring only once in 100 kills.

Pangolin (Tingeling) - The scales of the pangolin are coveted by the traditional Chinese medicine shops for the treatment of certain skin afflictions, and can fetch RM 120-150 per kg.

Borneon Gibbon – even though totally protected, the gibbon are still in demand as pets. A Gibbon can fetch up to RM 200-300 per head.

11.4 Forest Birds
During the interviews, four species of wild birds were identified as being of significant importance to the Penan. These birds included:

- Argus Pheasants (Argusianus argus) (Burung Ruai)
- Hornbills (Buceros sp.) (Kenyalang)
- Wild fowl (Lophura sp.) (Sempidan)
- Pigeon (Ducula sp.) (Punai / Empuna)

Among the four species, a live Argus Pheasant or hornbill are of the highest value, and can fetch a price of a few hundred Ringgits per head if sold. Both these species are totally protected species and are therefore illegal to keep without license from the Forest Department and illegal to sell. During the field surveys (October – November 2009) there were no reported incidences or reports of any household receiving income from selling these species.

As far as source of protein for the family is concerned, the pigeon, qual and wild fowl are important species. The Penan often purposely go hunting for these species, as they are relatively easy to catch. Both pigeons and quail can be trapped using nets.

The wild fowl and the argus pheasant inhabit the ground level in virgin forest, while the hornbills inhabit the canopy. The pigeon are found in secondary forest area, where a tree locally known as Kelapa (mayam tree in Iban) or Leban abounds. The fruits of the Kelapa trees are favorite food of the pigeon.

The wild fowl (and in the past the Argus Pheasant) are normally caught using traps; while the pigeon are caught using nylon fishnets strung across the known pigeon flock flight paths. Unfortunately with this method, it is not uncommon to wipe out the whole flock. Wild fowl and pigeon are available all year round and are the main birds caught as sources of protein, and sometimes sold to the timber camps. Capturing wild fowl is a task mainly done by the men of the community, whereas pigeons are caught by anybody able (as setting up of the nets is a simple task). Indeed, the young people like to catch pigeon.

Among the four species, the argus pheasant and the hornbills are getting very difficult to find because of the reductions in the areas of primary forest.

11.5 Terrestrial reptiles and amphibians.
The respondents of the survey identified six species of reptiles and amphibians, having significant importance to the Penan. These included:
• Monitor lizard (Varanus salvator) (Bayak)-(59% of respondents)
• Soft-shelled freshwater turtle (Amyda cartilaginea) (Lelabi)-(43% of respondents)
• Tortoise (Manouria emys) (Kekura)-(11% of respondents)
• Bull frogs (Pama') – (62% of respondents)
• Python (Python reticulata) (Sawa') – (81% of respondents)
• ‘Ripong’ snake (Python sp.) (81% of respondents)

The monitor lizard, tortoise and local bullfrog inhabit both aquatic and terrestrial environment, while the soft-shelled turtle is fully aquatic. While the Penan consume the meat as well as the eggs of these turtle species, the importance of these species as protein sources is significantly less compared to mammals and freshwater fishes. The Penan do not go out specifically to hunt these species and the killing of these species for food is purely by ‘chance-encounter’, especially during a hunting trip, going to the farm and during the gathering of jungle produce. These species seem to be available throughout the year and could be caught by anybody, male, female and young. These species are generally easy to kill using knives, spears, sticks, or caught by hand, and sometimes with the help of the hunting dogs.

Of the six species, the monitor lizard (Varanus sp.) (particularly the smaller species locally known as Bayak Pungo) is also of medicinal value. Both the meat and the gall bladders (smoked) are used for the traditional treatment of Asthma. The Chinese traders in particular relish these species as rare, exotic meat. “Bayak Pungo” is difficult to find and is a protected species.

11.6 Insects and larvae
The survey identified three species of insects and larvae, which are normally consumed by the Penan. These include:

• Honey bees (Manyie)
• Sago grubs (Ulat mulong / Tinoh)
• Bots (the larvae of large species of fly).

The honeybee is known in other cultures for its unique sweetness and medicinal values. However the Penan considered it as the least important among the three species. The main reason is that the beehives are normally high up in the Tapang tree and the Penan have not traditionally engaged in climbing to get to the hives. The Penan generally only seek the bee species building hives in shorter species of trees and in tree stumps. They collect honey or just the beehives housing the young larvae. The honey and the larvae are valued sources of food and the hives can also be processed and used as wax.

The most important species is this category is the Sago grub, which is listed as one of the staple food of the Penan. Collecting the Sago grubs is one of the few forest exploitation activities where the wife and the children accompany head of household in collecting.

Bots are larvae of the large species of flies locally known as the ‘Lunyong’. Meat of hunted animals are exposed to allow the bot fly to lay eggs and when the larvae reach a length of about one inch, they are harvested and consumed in the same manner as the consumption of sago worms.

Of the three species of insects, worm or larvae, the sago grub is becoming more difficult to collect because the sago trunks available for processing into sago flour are further and further away from the Penan habitations. However, the sago grubs are still available as and when one would fell/prepare sago palm trees for the worm to inhibit and breed.
11.7 Edible Tree parts, plants and fruits

Some edible tree parts and plants including fungi consumed by the Penan are listed in Table 113. Other plants include wild banana, rattan (palm), bamboo, fern and leafy vegetables. These species are readily available all year round and could be gathered by any able person. However, Lalis (bitter rattan palm shoots) shoots are generally over-exploited especially due to demand by the timber workers. Tree parts and edible plants are mainly for self-consumption but sometimes the products are sold to the timber workers for cash to buy basic daily necessities. These species are generally considered to be growing wild and as such belong to the community meaning any body can gather them, including outsiders.

Table 113 Estimated annual replacement value of plants and fruits collected (50 families).

<table>
<thead>
<tr>
<th>Plant / Fruit</th>
<th>Estimated quantity consumed per year (Kg)</th>
<th>Price per Kg</th>
<th>Consumed Value / Yr (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild mushrooms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kulat Taun</td>
<td>50</td>
<td>$7.00</td>
<td>350.00</td>
</tr>
<tr>
<td>Kulat Ayam</td>
<td>50</td>
<td>$8.00</td>
<td>400.00</td>
</tr>
<tr>
<td>Kulat Kerang</td>
<td>600</td>
<td>$5.00</td>
<td>3,000.00</td>
</tr>
<tr>
<td>Kulat Pik</td>
<td>1,200</td>
<td>$5.00</td>
<td>6,000.00</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>1900</strong></td>
<td></td>
<td><strong>9,750.00</strong></td>
</tr>
<tr>
<td>Wild bananas</td>
<td>300</td>
<td>$5.00</td>
<td>1,500.00</td>
</tr>
<tr>
<td>Rattan shoots (Gelayan)</td>
<td>300</td>
<td>$3.00</td>
<td>900.00</td>
</tr>
<tr>
<td>Sago shoots</td>
<td>300</td>
<td>$15.00</td>
<td>4,500.00</td>
</tr>
<tr>
<td>Palm shoots (Aping)</td>
<td>600</td>
<td>$5.00</td>
<td>3,000.00</td>
</tr>
<tr>
<td>Rattan shoots (Lalis)</td>
<td>3000</td>
<td>$0.30</td>
<td>900.00</td>
</tr>
<tr>
<td>Palm shoots (Nibong)</td>
<td>100</td>
<td>$8.00</td>
<td>800.00</td>
</tr>
<tr>
<td>Ferns - julut-paku-Midin</td>
<td>600</td>
<td>$4.00</td>
<td>2,400.00</td>
</tr>
<tr>
<td>Bamboo shoots</td>
<td>3,000</td>
<td>$0.30</td>
<td>900.00</td>
</tr>
<tr>
<td>Daun sabung/veggies</td>
<td>600</td>
<td>$4.00</td>
<td>2,400.00</td>
</tr>
<tr>
<td>Ginger (tipus)</td>
<td>52</td>
<td>$2.00</td>
<td>104.00</td>
</tr>
<tr>
<td>Langkong (Ipoema sp)</td>
<td>52</td>
<td>$2.00</td>
<td>104.00</td>
</tr>
<tr>
<td>Spice and flavour enhancing plants</td>
<td>52</td>
<td>$2.00</td>
<td>104.00</td>
</tr>
<tr>
<td>Sago starch</td>
<td>12,000</td>
<td>$4.50</td>
<td>54,000.00</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>71,612.00</strong></td>
<td></td>
<td><strong>81,362.00</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are also many types of fruits that the Penan consume that include trees that have been planted or tended over the years. Some species such as wild durian are of economic importance and during the fruiting seasons these fruits would be sold for cash. The estimated value of the more important fruits is indicated in Table 114.

Table 114 Estimated annual replacement value of fruits planted or tended by a community (50 families).

<table>
<thead>
<tr>
<th>Fruit</th>
<th>Estimated Quantity consumed per year</th>
<th>Local Price RM/unit</th>
<th>Total Value per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durian/Isu</td>
<td>5,000 fruit</td>
<td>5.00</td>
<td>25,000.00</td>
</tr>
<tr>
<td>Rambutan</td>
<td>250 Kg</td>
<td>2.00</td>
<td>500.00</td>
</tr>
<tr>
<td>Fruit</td>
<td>Quantity</td>
<td>Unit</td>
<td>Price</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Esau - longan</td>
<td>100</td>
<td>Kg</td>
<td>4.00</td>
</tr>
<tr>
<td>Fruiting flower (Engkala)</td>
<td>500</td>
<td>Kg</td>
<td>5.00</td>
</tr>
<tr>
<td>Chempedak</td>
<td>250</td>
<td>Kg</td>
<td>3.00</td>
</tr>
<tr>
<td>Buah Ma’ (pulasan)</td>
<td>250</td>
<td>Kg</td>
<td>3.00</td>
</tr>
<tr>
<td>Jackfruit Buah Bukoh</td>
<td>250</td>
<td>Kg</td>
<td>2.00</td>
</tr>
<tr>
<td>Terap</td>
<td>250</td>
<td>Kg</td>
<td>2.00</td>
</tr>
<tr>
<td>Petai</td>
<td>150</td>
<td>Kg</td>
<td>5.00</td>
</tr>
<tr>
<td>wild dabai</td>
<td>100</td>
<td>Kg</td>
<td>3.00</td>
</tr>
<tr>
<td>Kubal susu</td>
<td>250</td>
<td>Kg</td>
<td>3.00</td>
</tr>
<tr>
<td>Pedalai</td>
<td>100</td>
<td>Kg</td>
<td>2.00</td>
</tr>
<tr>
<td>Berangan-chesnut</td>
<td>100</td>
<td>Kg</td>
<td>4.00</td>
</tr>
<tr>
<td>Salacca sp.</td>
<td>20</td>
<td>kg</td>
<td>4.50</td>
</tr>
<tr>
<td>Langsat</td>
<td>52</td>
<td>kg</td>
<td>3.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,622</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11.8 Medicinal Plants including fungi.
Traditionally, the Penan utilized a wide range of medical and herbal plants and some of these are indicated in Table 115. Today, the younger generation (generally those less than 40 years of age) do not know much about these plants (the use or the name). The species most often mentioned include:

- Tongkat Ali (*Eurycoma longifolia* jack)
- Tubai Buah (*Croton tiglium*)
- Tubai Akar (*Croton tiglium*)

Tongkat Ali is the most widely known among the natural growing forest tree species, and there is anecdotal evidence that it is effective as a general body tonic promoting improved blood circulation. Tongkat Ali is normally found in the vicinity of certain forest palm called the Aping Palm (*Arenga brevipes*).

Tubai buah and Tubai akar are tree species, which produce neuro toxic poison called Rotenone. The fruit of Tubai Buah and the roots of Tubai Akar are used in poison fishing, even though this practice is now banned.

Another species is Jeranggau Merah; a rhizome from the ginger family (*Boesenbergia sp.*) and is traditionally used as anti-poison as well as an anti-alcohol medication. According to the local informants, heavy drinkers who put Jeranggau Merah under their tongue can drink as much as they wish without getting drunk. The efficacy of Jeranggau Merah as anti alcohol is also locally accredited among other communities such as the Iban, Bidayuh and Orang Ulu.

There are also a number of herb species the Penan use to treat a variety of local ailments including, poison from insect stings, snake or scorpion bites, stomach ache, fever, muscle aches and hypertension. The older generation (above 50 years old) also retains the belief that certain plant species could be used for protection against spirits. Those who have converted to Christianity generally do not believe in the spiritual power of such plants. The estimated replacement value of herbal plants is RM3,400 per longhouse per year.

The Penan also mentioned about a type of big and hard mushroom (*Ganoderma lucidum*) normally growing on living trees, especially the hardwood species, e.g. Belian (*Eusideroxylon zwageri*) and Selanggan Batu (*Shorea spp.*). Knowledge about the importance of these Germanium mushrooms has been gathered from Chinese traders who seek this type of mushroom in the Plieran area.

The general group of Germanium mushrooms are gaining popularity as a beneficial super food in North America. These mushrooms are high in vegetable proteins and...
low in calories, making them a valuable source of healthy nutrition. They also contain zinc, iron, chitin, vitamins, minerals, and dietary fibre. The mushrooms also contain a substance called Germanium; a nutrient that helps boost the oxygen efficiency within the body. Germanium also helps counteract the body's exposure to environmental toxins and helps to increase the body's ability to fight disease. The potential for use of Germanium mushrooms as a new economic crop needs further study. This crop could be introduced to the Penan communities to uplift their income in the face of depleting natural forest products.

Table 115 Estimated annual replacement value of assorted plants used by a community (50 families).

<table>
<thead>
<tr>
<th>Plant</th>
<th>Use</th>
<th>Estimated quantity used / year</th>
<th>Unit</th>
<th>Price RM / unit</th>
<th>Total value / year (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tongkat Ali</td>
<td>Fever &amp; stimulant</td>
<td>50</td>
<td>Pieces</td>
<td>2.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Misai Kuching</td>
<td>Diabetes &amp; Hypertension</td>
<td>100</td>
<td>Handful</td>
<td>2.00</td>
<td>200.00</td>
</tr>
<tr>
<td>Hemptedu Bumi</td>
<td>Diabetes &amp; Hypertension</td>
<td>100</td>
<td>Handful</td>
<td>2.00</td>
<td>200.00</td>
</tr>
<tr>
<td>Kayu Hujan Panas</td>
<td>Blood circulation</td>
<td>50</td>
<td>Pieces</td>
<td>2.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Kayu Ipoh</td>
<td>Dart poison</td>
<td>200</td>
<td>Cupful</td>
<td>2.00</td>
<td>400.00</td>
</tr>
<tr>
<td>Tuba</td>
<td>Fishing</td>
<td>100</td>
<td>Kg</td>
<td>3.00</td>
<td>300.00</td>
</tr>
<tr>
<td>Rugin leaves</td>
<td>Skin diseases</td>
<td>50</td>
<td>Handful</td>
<td>2.00</td>
<td>100.00</td>
</tr>
<tr>
<td>selukai</td>
<td>Mosquito repellent</td>
<td>200</td>
<td>Pieces</td>
<td>2.00</td>
<td>400.00</td>
</tr>
<tr>
<td>Riau leaves</td>
<td>Diarrhoea</td>
<td>50</td>
<td>Handful</td>
<td>5.00</td>
<td>250.00</td>
</tr>
<tr>
<td>Climbers (akar)</td>
<td>Headache</td>
<td>50</td>
<td>Handful</td>
<td>5.00</td>
<td>250.00</td>
</tr>
<tr>
<td>Jrau Kup</td>
<td>Burnt / scaling</td>
<td>10</td>
<td>Handful</td>
<td>5.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Leaves (daun kayu)</td>
<td>Ointment for massage</td>
<td>50</td>
<td>Handful</td>
<td>5.00</td>
<td>250.00</td>
</tr>
<tr>
<td>Leaves (daun kayu)</td>
<td>Muscle &amp; Joint pain</td>
<td>50</td>
<td>Handful</td>
<td>5.00</td>
<td>250.00</td>
</tr>
<tr>
<td>Ngo'</td>
<td>Cut &amp; bruises</td>
<td>50</td>
<td>Handful</td>
<td>5.00</td>
<td>250.00</td>
</tr>
<tr>
<td>Tepang / Ubat selih</td>
<td>Anti venom &amp; snake bites</td>
<td>10</td>
<td>Handful</td>
<td>5.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Kayu &amp; Daun</td>
<td>Post natal &amp; delivery</td>
<td>50</td>
<td>Handful</td>
<td>5.00</td>
<td>250.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1170</strong></td>
<td></td>
<td></td>
<td><strong>3,400.00</strong></td>
</tr>
</tbody>
</table>

11.9 Other Useful Plants

The Penan have a wide array of useful plants with multiple uses that fulfil the daily living needs and many of the material needs for the community. Table 116 outlines the estimated annual value for a range of household items, the raw materials for which are obtained from the forest.

Some Rattan species are used for making mats and baskets for their own use and for sales. Rattans are normally available all year round and are collected by the men with the women splitting and weaving the processed rattan into the desired products. For the highly prized rattan species such as Sega and Semambu, \((\text{Calamus sp.})\), if grown on somebody's land are considered owned by the landowner. The wild species normally belong to the community in general. Good Rattan species are becoming difficult to find unless one is prepared to go to great distances. As a result the making of mats and baskets has become a minor activity in the longhouse and as
the Penan can no longer reliably depend on rattan crafts for cash income. During the survey only one lady was observed splitting rattan for mat making. She complained that rattan was very difficult to collect and was convinced that it is a vanishing resource unless the Penan could start to plant rattan (Figure 112).

Figure 112 The Murum Penan are well known for the fine quality of their woven rattan mats and baskets.

Tapang trees (*Kompassia excelsa*) were formally used for making blowpipes but now due to logging the species are rare and totally protected. The timber of a number other trees are useful for building materials for general construction, boats and crafts. However, even good timber species are now getting difficult to find due to logging and the expansion of plantation activities. Other plant species relied on for general building materials used to make shelters and items around the farm include bamboo and other useful palms are still relatively abundant (Figure 113).

Figure 113 Plant materials have myriad uses in the community.
Firewood materials are also still abundant in the vicinity of the longhouse. However, good-quality species (e.g. "Kelampai tree", *Elateriospermum sp.*) are becoming more difficult to find.

**Table 116 Estimated annual replacement value of forest products used by a community (50 families).**

<table>
<thead>
<tr>
<th>Item produced</th>
<th>Estimated Quantity produced / used per year</th>
<th>Units</th>
<th>Local price RM/ unit</th>
<th>Total value per year (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rattan baskets (5 types)</td>
<td>350 basket</td>
<td>25.00</td>
<td>8,750</td>
<td></td>
</tr>
<tr>
<td>Rattan mats (3 types)</td>
<td>180 per mat</td>
<td>150.00</td>
<td>27,000</td>
<td></td>
</tr>
<tr>
<td>Pandanus mats</td>
<td>100 per mat</td>
<td>40.00</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>Blowpipes (dart, container)</td>
<td>15 per blowpipe</td>
<td>150.00</td>
<td>2,250</td>
<td></td>
</tr>
<tr>
<td>Boats + paddles + poles</td>
<td>25 per boat</td>
<td>270.00</td>
<td>6,750</td>
<td></td>
</tr>
<tr>
<td>Material for farm house</td>
<td>50 per house</td>
<td>700.00</td>
<td>35,000</td>
<td></td>
</tr>
<tr>
<td>Lesong (rice mortars)</td>
<td>25 per unit</td>
<td>500.00</td>
<td>12,500</td>
<td></td>
</tr>
<tr>
<td>Binding and resins</td>
<td>100 RM per family</td>
<td>1.00</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Musical Instruments</td>
<td>5 per unit</td>
<td>200.00</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Hats, fans, winnowing stuff</td>
<td>300 per unit</td>
<td>20.00</td>
<td>6,000</td>
<td></td>
</tr>
<tr>
<td>Fishing equipment</td>
<td>50 per unit</td>
<td>20.00</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Utensils</td>
<td>50 per set</td>
<td>50.00</td>
<td>2,500</td>
<td></td>
</tr>
<tr>
<td>Parang handle and scaboard and tools</td>
<td>50 per set</td>
<td>70.00</td>
<td>3,500</td>
<td></td>
</tr>
<tr>
<td>Coffin</td>
<td>3 per unit</td>
<td>200.00</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Firewood replacement</td>
<td>600 gas cylinder</td>
<td>50.00</td>
<td>30,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1903</strong></td>
<td></td>
<td><strong>140,950</strong></td>
<td></td>
</tr>
</tbody>
</table>
12  RIVERS AND THE PENAN ECONOMY

The Western Penan have traditionally settled alongside rivers and as such rivers play a significant role in their lives. This role ranges from providing a source of protein to transport, to playing a part in their folklore.

The river system also demarcates the boundary of the foraging range between separate Penan communities as well as the boundary with other adjacent ethnic groups. The foraging range of the Penan is generally inclusive of the main river system or catchment they inhabit.

The river system also provides a lifeline for the Penan to communicate with other communities, towns and government services. Up until recently, river transport was the only alternative for the Penan before the arrival of logging and the associate logging roads.

As with the forest, the river is a significant provider of edible and income generating products (Figure 121).

Figure 121  Rivers play a significant role in the daily lives of the Penan.

12.1  Fishing

The Penan, particularly the women are ardent fishermen/women. During interviews, the respondents identified the following fish species as important:

- Semah (Tor sp.) (95% of respondents)
- Empurau (Tor sp.) (95% of respondents)
- Tengadak (Puntius schwanenfeldii) (95% of respondents)
- Labang (95% of respondents)
- Lajong (16% of respondents)
- Freshwater Prawn (95% of respondents)
- Sayan

The fishing methods employed are essentially the same as those used by other Sarawak communities:
• Fishing hooks and line,
• Long line (Rawai or Tail Panjai) with multiple hooks
• Ginti Ujak (Short Pole with hook)
• Cast Nets (Jala)
• Nylon nets.

Fishing hooks and lines are used for normal fishing to catch a small number of fish, mainly the top and middle feeders. Long line systems (generally several meters), consist of multiple hooks tied at intervals of about 0.3 m along the fishing line. Bait is normally comprised of earthworms, fruit of the Ara tree (Ficus spp.) or chicken intestine secured to the hooks. The long lines are laid down either across the river or along side the riverbanks. A stone is tied to the end sinks the line and keeps the line close to the riverbed.

Fish normally caught by long lines tend to be bottom feeders such as “Ikan Labang, Lajong, Baung” and occasionally freshwater turtle.

The ‘Ginti Ujak’ consists of a short pole of about 1 meter in length with a short fishing line of about 0.3 – 0.5 m with a hook attached to the pole. Bait is normally the same as for long line fishing. The poles are stuck into the submerged part of the riverbank, so that the fishing line and bait are in the water. About 15 – 30 cm of the pole is left sticking out of the water for the purpose of locating the fishing pole and for finding which pole caught the fish. A number of such fishing poles (30-50 poles) are planted along the submerged part of the riverbank. The fish normally caught by such method are the same as fish species caught using the long line. It is not uncommon to leave the fishing poles a few days before taking them back or moving them to other locations.

Casting Nets (Jala) - are used for fishing along the bank of river or in the deeper parts of the river (Lubok). There are different jala net sizes using different gauges of nylon fishing line depending on the type and size of the target fish.

Fishing Nets – are more suited for catching a large number of fishes. As with the jala net is made of nylon string and there are different net sizes (both in terms of the length and the size of the mesh openings. The length of the net is normally about 30-50 m and the depth is about 3 -5 m depending on the type and size of the target fish. Floats are normally attached to the top part of the net and weights are used along the bottom part to keep the net taught and open in the water. This type of net is more suitable to catch premium fish such “Semah, Empurau, Labang, and Tengadak”.

Generally, there has been a decline in availability of all species of fish with a marked decline in catch noted for the premium species such Semah, Empurau and Tengadak. The main causes are pollution of rivers by silt arising from erosion caused by logging and plantation activities and over exploitation by timber and plantation workers. The polluted rivers destroy the breeding ground of these fish species and combined with uncontrolled exploitation the fish population has been dwindling very rapidly.

In addition, logging roads have made the Danum and Plieran areas more accessible to outsiders who also come to the area to exploit the fish resources not only for their own consumption but also for sale.

At present the majority of the community’s protein requirements are met through the use of common fish species such as the small-scaled species (67% of respondents) and catfish species (67% of respondents). The premium fish species (large-scaled) are difficult to catch unless one is prepared to go a great distance to the upper reaches of Danum and Plieran and this requires extensive investment in time (at least a week). This is of little use to meet the protein requirements of the community, as there is no means to store or preserve the catch.
12.2 The Significance and Importance of Rivers

An estimation of the replacement value of the fish resources to the Penan communities is outlined in the Table 121. Assuming a replacement price for fish protein the same as for meat protein (RM8.00/kg), it is estimated that a Penan longhouse (50 households) catches 5,000 kg of small scaled and catfish species giving a total value of RM40,000 per year.

Table 121 Estimated annual replacement value of fish to the community (50 families).

<table>
<thead>
<tr>
<th>Fish Species</th>
<th>Estimated Quantity caught / year (kg)</th>
<th>Estimated protein replacement value (RM per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semah</td>
<td>15</td>
<td>120</td>
</tr>
<tr>
<td>Empurau</td>
<td>20</td>
<td>160</td>
</tr>
<tr>
<td>Tengadak</td>
<td>15</td>
<td>120</td>
</tr>
<tr>
<td>Other species incl. catfish</td>
<td>5,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Bawan</td>
<td>15</td>
<td>120</td>
</tr>
<tr>
<td>Total</td>
<td>5065</td>
<td>40,520</td>
</tr>
</tbody>
</table>

(Note: RM8.00 per kg is used as the replacement value for protein)

Like the forest resources, the resources of the river are being depleted due to a number of factors. The increase of population pressure and increasing commercialization of resources have resulted in over fishing as the local communities seek means for income generation to address the shortfalls in the natural resources. This situation is aggravated by the various land uses surrounding the communities (logging, conversion of land to plantations) and the resulting negative environmental effects.

The construction of logging and access roads has resulted in severe hill slope erosion that has in turn caused high river siltation with a negative affect on the breeding of scaled fish species. However, there are signs that the population of catfish species is actually increasing. This increase in the population of catfish was noted by the Fishery Branch of the Department of Agriculture in 1997 and is probably attributed to the fact that catfish lay their eggs on muddy riverbed. Thus heavy silting may actual improve the hatching of the eggs of catfish species at the expense of the other species.
13 SATISFACTORY LIVING, WEALTH AND POVERTY

During group discussions in the various communities, the question of what comprises a satisfactory living was posed. From the responses this question elicited it is evident that the Penan have criteria by which they measure satisfactory living. This is measured not so much by wealth as by the ability to live and survive.

In the past they money was not required for the day-to-day subsistence resources as these were readily available from hunting, gathering and fishing in the surrounding forest and rivers. Money was only needed for purchasing materials that could not be obtained from the forest. Money was also not a problem as there was generally a ready market for the forest products they had for sale. As there was little to spend money on in the community and they had abundant resources on which to survive, the cash they did have went a long way.

Today, this has all changed; with the competing land uses, the ability of the forest to provide them with the resources they need has been very much reduced. Whereas before the Penan only needed money for items they could not find in the forest, they must now depend much more on money to buy the essential day-to-day items. While there is still a market for the forest products, finding these products is much more time consuming (due to distance to reach the remaining forest and the state of the remaining forest). Cash therefore has become a much more important part of their economy and by extension, the need for employment to obtain cash.

Thus, employment opportunities and cash income opportunities have become important criteria for satisfactory living. To a small degree the timber companies have met this need. Employment and income has been provided through temporary jobs that enable the Penan to obtain cash to buy the necessities they need. However, this is only marginally satisfactory as the numbers employed are low and the amounts earned mean that the Penan are essentially only subsisting. They recognise there is a need for more employment opportunities and this has become a regular request.

As much as there is recognition of the need for employment, most of those interviewed still maintain that an essential element of satisfactory living is having sufficient land for cultivation of rice and planting of fruit trees and other cash crops. Having access to forest for hunting, fishing and gathering forest produce is also an important facet in what is viewed as a satisfactory living. The Penan concept of satisfactory living is very much linked to having a range of survival options and one of these options is being able to continue their old lifestyle of hunting and gathering. This is a fallback position that can be considered as an “insurance policy” to having sufficient land for rice planting and possibilities of employment to provide cash income.

A very important aspect of what is viewed as satisfactory living is ensuing a future for their children. In this the Penan desire for the children to be successful in school and to be able to further their education. They acknowledge that education provides access to opportunities for jobs, and jobs provide the money for their sustenance.

The idea of community is very strong among the Penan and belonging to this community carries with it the obligation to share and look out for one another. This has been central to the ability of the Penan to survive not just in the forest, but also during the changes that have occurred over the past 20 or so years.

In the context of the Penan community no one is considered as poor or rich. As long as there is sufficient food to eat, they do not consider themselves as poor and there is no identification of those who are poor. All are expected to share and ensure that those in need are provided assistance. This concept is very much linked to the idea of a shared resource that belongs to no one in particular, but is available to everyone in general. As the community moves towards a cash economy based on employment
and individual agriculture land use, maintaining the concept of sharing of resources and looking after disadvantaged members of the community will be a challenge.

13.1 Monitoring and evaluating Penan welfare
The Murum Penan communities are in a transitional mode. They are between the pull of modernity and attachment to their traditional values and lifestyle. Any attempt to monitor and evaluate their welfare needs to understand the way they themselves see the changes that are before them and what they feel they need to have to adjust to the needs of modern living.

To gather as wide a range of inputs and views as possible, group discussions and collective interviews were conducted in addition to the door-to-door surveys. These interviews provided additional, more personal insights that can be derived solely from the social-economic surveys and data. For the group discussions and individual interviews, village heads and elders and recognised community leaders were selected. In addition to the collective interviews, records of discussions were also kept to gather a wide range of opinions and viewpoints.

13.1.1 Living standards in the longhouse
The Penan value very highly the idea of equality within the community, where there are no extremes and those who have more share with those who have less. This view even extends to items such as boats or chain saw, whereby they should be loaned to those who wish to use them. Similarly, for those working they are expected to share their earnings with members of their families who are not working. One of the headmen commented that he could not be rich even though he might get assistance from the timber camps because he had to share with those who asked him. There is thus an obligation to assist those who are not working and need the money, so assistance is given.

Those who hunt will share game with those who do not, especially those who do not own hunting dogs. On the other hand, there is also the sharing and exchanging of other food items such as vegetables and fruits. As stated by one informant, “We Penan share our food. It is important that if we have plenty we share with others. At the same time if we do not have we can ask those who have.”

With sharing as a core value in the community, everyone is considered equal and on an average footing with each other. This system serves to balance wealth in the community and places everyone on an average standard. While this system ensures that everyone is looked after, it does place additional burden on those who are more fit and able and those with more initiative to work. Those who are not able to care for themselves due to sickness or age are dependent on the charity of others without having the means to reciprocate.

13.1.2 What constitutes better than average living
The sense of sharing and equality within the community is such that the idea of persons being above average is not acceptable to the Penan. While the headmen of the longhouses receive substantial monthly allowances from the timber camps under their name, what they receive they share among the whole longhouse. The members of the community recognise who is receiving money and in a way consider this as a community good; if they have need, they can ask. The current indicators of living are such that as long as one has enough to eat they are considered the same as everyone else.

This situation however, is changing. Observable material ownership is an obvious example that a person has above average living standards in the longhouse. For example, one family at Long Peran owns a four-wheel vehicle, which is used to transport longhouse people to Sungai Asap town-ship. Another example of someone who is above average in terms of income is that of a young Long Wat man who is a university graduate and is employed as a government officer. He is still part of the
longhouse community, but has income that far exceeds anyone in the community. Other expressions of this changing situation are adopting more modern styles of dressing and wearing jewellery. These are usually related to people with external sources of income either through their own or a spouse’s or a close relative’s employment.

13.1.3 Perceived changes in the quality of life
Keeping the longhouse clean is one indication of the desire to improve the level of cleanliness and hygiene and a way of perceiving changes in the quality of life. One of the most obvious signs of this are those longhouses that have decided to keep their dogs on the ground and away from entering their houses. The Penan at Long Peran, Long Menapa, and Long Malim keep their houses clean by observing the practice. The floors in these longhouses is regularly swept and scrubbed indicating an understanding of hygiene and the causes of illness and a desire for a clean living environment. This general attitude towards cleanliness gives a marked change to their quality of life.

The exposure to the outside world with the development of roads and the introduction of TV and usage of mobile phones has not only made life convenient, but has an overall influence on the level of modernity of the community. In most communities, mobile phones are common and the people do not hesitate to use them to photograph visitors (Figure 131).

Other indications of changes in lifestyles include the fact that some Penan girls marry later than their mothers. This is mainly applicable to those who are at school and do not start a family until after their schooling has finished. Finally, education gives the younger generation the benefits of modernization, which in turn influence their older generation.

Figure 131 The communities are dynamic and adapting to the changes around them.
14 PENAN HEALTH

14.1 Introduction

Article X of the Alma Atta Declaration reaffirmed that “An acceptable level of health for all the people of the world by the year 2000 can be attained through a fuller and better use of the world's resources” (WHO, 1978). Embedded in the Global strategies for Health for All by the year 2000 is the WHO objectives of “the attainment by all people of the highest possible level of health” (WHO, 1981). Admittedly the achievements vary from country to country over the last 30 years. In general however the people are healthier, wealthier and living longer today than 30 years ago (WHO, 2008). As a member country of the WHO and the signatory of the Alma Atta Declaration, Malaysia has formulated its health policy towards attaining these stated objectives. In the national health policies, the situation with respect to minorities and the marginalised groups in Malaysia have been given due attention. The National Vision Policy, outlined in the Third Outline Perspective Plan for 2001–2010 (EPU, 2001) which replaced the New Economic Policy, states that on of the key dimensions will be “addressing pockets of poverty in remote areas and among Orang Asli and Bumiputera minorities in Sabah and Sarawak as well as increasing the income and quality of life of those in the lowest 30 per cent income category.” The needs of the Penan, being part of the indigenous people of Sarawak are obviously guaranteed under the current policy of the government.

Through the years, the Health Department of Sarawak has been very active in trying to alleviate the poor state of health of the Penan. Programmes to prevent and control diseases such as malaria have long been implemented in Penan areas. Statistics obtained from the Sarawak Health Department indicate that though malaria is still common among the Penan there are signs of improvement. Efforts to improve access to health care have been extended to all Penan area. The Ministry of Health has provided health services through the Klinik Kesihatan (KK) as well as through outreach programme such as the mobile Village Health Team and the Flying Doctor Services. Other government agencies have also made efforts towards improving the life of the Penan. Although no documents on the result of any quantitative evaluation of the various programmes implemented by the Health Department are available, anecdotal evidence has supported the impression that the health status of the Penan has improved over the last two decades or so. The comments by many Health Department personnel who have served in the Penan community have been positive about the health status of the Penan. The staff in KK Asap, the main clinic serving the Penan of the Urun and Murum area, has remarked that the morbidity patterns among the Penan from these two areas are not much different from that of other indigenous people in the Belaga area (i.e. the Penan suffer from the same conditions as the others). There is no evidence to indicate that certain diseases or conditions are peculiar to the Penan. The personnel in both KK Asap and KK Belaga think that the health status of the Penan was much better that it was before but they are still lagging compared to other main indigenous people in Belaga. This perception is difficult to establish scientifically for lack of data.

44 In 2005 the Sarawak Health Department launched a Strategic Plan to address the problems of access to health care. This plan was called “Reaching the Unreachable” or RTU for short.

45 A example is the multi-agency project in the Urun area in 1999. This project was primarily aimed at improving the environmental sanitation as well as promoting food production among the Penan. The Health Department, Agricultural Department and the District Office were involved in this project. The response from the Penan was excellent and the three months post-training assessment showed impressive improvement. Unfortunately long term interest among the Penan could not be achieved.
14.2 Major Health Concerns
The major health concerns for the Penan are the need for safe water, waste management including latrines and protection against communicable diseases such as Malaria, Tuberculosis and Measles. During the measles outbreak in the Urun area in 2005, 22 children were admitted and 13 children died (Sarawak HD, 2009). In 2009 a total of 12 cases of Malaria were reported from Murum area (Table 141).

Table 141 Distribution of Malaria, Murum area, Jan-Dec 2009

<table>
<thead>
<tr>
<th>Locality</th>
<th>No of cases</th>
<th>Age</th>
<th>Ethnic group</th>
<th>Parasite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Menapa, Belaga</td>
<td>1</td>
<td>10 mths</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Menapa, Belaga</td>
<td>1</td>
<td>4 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Menapa, Belaga</td>
<td>1</td>
<td>5 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Luar, Belaga</td>
<td>1</td>
<td>2 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Luar, Belaga</td>
<td>1</td>
<td>4 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Malim, Belaga</td>
<td>1</td>
<td>43 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Malim, Belaga</td>
<td>1</td>
<td>25 yrs</td>
<td>Penan</td>
<td>p.K</td>
</tr>
<tr>
<td>Long Singu, Belaga</td>
<td>1</td>
<td>2 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Singu, Belaga</td>
<td>1</td>
<td>4 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Wat, Belaga</td>
<td>1</td>
<td>15 yrs</td>
<td>Penan</td>
<td>P. K</td>
</tr>
<tr>
<td>Long Peran, Belaga</td>
<td>1</td>
<td>2 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Long Peran, Belaga</td>
<td>1</td>
<td>32 yrs</td>
<td>Penan</td>
<td>P.v</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Malaria Laboratory, Divisional Health Office, Bintulu

Ensuring safe childbirth is another core objective of the health policy. Sarawak has achieved good progress in promoting safe delivery through the establishment of rural clinics. According to Wong (2007) the road to safe deliveries in Sarawak has been long, tortuous and at times uncertain. The WHO (In: USAIDS, 2007) defines "safe delivery" as normal labour and birth conducted by skilled attendant. A skilled attendant is defined as "health professional such as a midwife, doctor or nurse, who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborn babies. Deliveries at home, still common among the Penan in Murum area, are generally considered as "unsafe deliveries". In 2009, a Traditional Birth Attendant conducted 79% of the deliveries in Murum area. This is much higher than the percentage of unsafe delivery for the whole Sarawak, which in 2008 was only 1.5% (Sarawak Health Department, 2010) Training of TBA's have been conducted on regular basis in Belaga District and 25 TBS’s from Urun and 14 from the Murum area were trained in 2009 and 2010 respectively (Table 142)

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46 The Traditional Birth Attendants are women in the local communities who attend to women in labour. Since the 1970’s the Sarawak Health Department has provided training for these TBA’s in antenatal care, assisting normal delivery and post-natal care. They are mostly elder “aunties” who by circumstances attend to women in labour. Their role is to complement professional midwives.
Table 142 Normal birth according birth attendants (safe and unsafe delivery) Murum area, 2009.

<table>
<thead>
<tr>
<th>Kampung</th>
<th>Jan-June 2009</th>
<th></th>
<th></th>
<th>July - December 2009</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total birth</td>
<td>Unsafe</td>
<td>Safe</td>
<td>Total birth</td>
<td>Unsafe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>delivery</td>
<td>delivery</td>
<td></td>
<td>delivery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(%)</td>
<td>(%)</td>
<td></td>
<td>(%)</td>
</tr>
<tr>
<td>Long Singu</td>
<td>4</td>
<td>3 (75)</td>
<td>1 (25)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Long Peran</td>
<td>3</td>
<td>3 (100)</td>
<td>0</td>
<td>2</td>
<td>1 (50)</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>4</td>
<td>4 (100)</td>
<td>0</td>
<td>2</td>
<td>2 (100)</td>
</tr>
<tr>
<td>Long Tanga</td>
<td>1</td>
<td>1 (100)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Long Luar</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2 (100)</td>
</tr>
<tr>
<td>Long Malim</td>
<td>8</td>
<td>8 (100)</td>
<td>0</td>
<td>4</td>
<td>2 (50)</td>
</tr>
<tr>
<td>Long Wat</td>
<td>2</td>
<td>2 (100)</td>
<td>0</td>
<td>4</td>
<td>4 (100)</td>
</tr>
<tr>
<td>Long Jek</td>
<td>4</td>
<td>3 (75)</td>
<td>1 (25)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>24 (92.3)</td>
<td>2 (.8)</td>
<td>18</td>
<td>11 (61)</td>
</tr>
</tbody>
</table>

Source: Divisional Health Office, Kapit, 2010

On inspection the general sanitation in all the Penan longhouses in Murum is considered poor. In all the longhouses sanitation is generally poor with many of the pour flush latrines not functioning. As a result, the bushes at the back of the longhouses houses are most commonly used for defecation and this presents a rather unhygienic situation. In general however, the village compounds kept clean and free of rubbish. This compares favourably with rural villages and longhouses of other communities in Sarawak which tend to generate more rubbish and where proper disposal are not practiced. Dogs, which are often not well kept, live in the same rooms as the people. The chances of zoonotic infection among the people are real.

14.3 Nutrition

14.3.1 Managing nutrition in the home

The Penan do not understand the concept of the Carbohydrates, fats, vitamins, minerals, proteins, fibre and water, which constitute the basic nutritional elements of food. Nor do they understand the concept of food pyramids. The idea of balanced diet based on the food pyramids is fairly alien to them. The food that is served for the family is based on what is available in the kitchen. During the surveys, several kitchens were visited and in general the food supply was low. No kitchen activities were observed during lunch hour when children and adults were generally observed eating fruits.

A total of 200 children under the age of seven were examined during the survey. Based on weight for age, 12% of children below 5 years of age were found to be severely malnourished and 31% were moderately malnourished. These findings are similar to those of the study carried out by the State Health Department on the Penan in the Urun area in 2008 (Sarawak HD, 2009). By comparison, the overall rate of malnutrition for Sarawak in 2009 was 1.4% for severely malnourished and 9.9% for moderately malnourished. (Sarawak Health Department, 2010). Malnutrition often starts at the age of seven when breast milk is no longer sufficient to meet the child’s nutritional needs. In this setting, complementary feedings to supplement breast milk is not normally practiced.
According to the respondents, children under the age of 10 years are often hungry (66%). Toddlers generally share the same kind of food with the adults, food which is rich in carbohydrates and low in proteins and other nutrients. Sago paste (linut) is readily consumed by children and adults alike without any evidence of additional food supplements. There is no special diet prepared for any malnourished children in the family.

14.3.2 Food abundance and shortages

The Penan of the Murum area were, in the past, used to abundant food resources and not known to preserve any food. They would normally finish off immediately whatever game they had hunted. Now however, with game and forest resources limited they understand the need to preserve their food so that they can extend the availability of food. The most common form of preservation is smoking and food such as wild boar meat is not only consumed fresh but preserved by smoking as well. When people eat most and least and how much they eat.

The only time that they can eat as much as they can is during feasts and these only occur during funerals, weddings or at Christmas. During such occasions the food is prepared communally so estimates of the amount of food consumed varies. However, even the smallest feast deserved at least the sacrifice of one pig. The description of these feasts is always about food aplenty and the chance to "makan puas puas" or to eat to their hearts content. A lot of alcohol is normally consumed during such feast.

There was general agreement that they do not eat much at other times as they are short of food most of the time. They eat very little during time of poor harvest or when they can’t find any food in the jungles, which, apparently very common. Seventy-five percent of the respondents interviewed reported that they always run out of food.

14.3.3 Eating patterns and favourite food

While linut and rice are eaten almost everyday, these foods are not generally considered that as their favourite. Wild boar was reported as the favourite food by 43% of the respondents, followed by fish (42%). Beef and chicken are not popular among the Penan probably due to the fact that these items are not readily available (Table 143). Children eat the same food as adults. There were no food items reported as taboo but certain wild animals such as deer are not that popular among the Penan.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild boar</td>
<td>71 (43)</td>
</tr>
<tr>
<td>Fish</td>
<td>70 (42)</td>
</tr>
<tr>
<td>Sago shoot</td>
<td>56 (33)</td>
</tr>
<tr>
<td>Bamboo shoots</td>
<td>6 (3)</td>
</tr>
<tr>
<td>Chickens</td>
<td>14 (8)</td>
</tr>
<tr>
<td>Beef</td>
<td>7 (4)</td>
</tr>
<tr>
<td>Others</td>
<td>63 (38)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>165 (100)</strong></td>
</tr>
</tbody>
</table>

14.3.4 Who eats most and who eats least

The majority of the families interviewed (46%) are always short of food. For most families (75%) the food is shared equally among members of the family. Some families (6%) allow their children to eat most of the food while 1% allows the sick to
eat most of the food. Even in times of food shortage, only a small percentage of families (1%) gave the least amount of food to the men, women and the elderly.

14.3.5 Obtaining food in times of scarcity.
When they run out of food the most common approach is to go to the forest to forage for food or to fish in the river. Some respondents (27%) asked for help from their neighbours (Table 144). The practice of sharing food among relatives and neighbours is a long held practice among the Penan as the view “everyone in the longhouse as related to each other.” Thus, no one would bear to see anyone in the longhouse suffer from food shortages and certainly not starvation. Some of the respondents also go to the timber camp to ask for food in times of severe shortages.

Table 144 Methods of getting food when supplies run short.

<table>
<thead>
<tr>
<th>Methods of obtaining food</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy from shops</td>
<td>7 (4)</td>
</tr>
<tr>
<td>Fish from the river</td>
<td>5 (3)</td>
</tr>
<tr>
<td>Go to the jungle</td>
<td>62 (37)</td>
</tr>
<tr>
<td>Go without food</td>
<td>5 (3)</td>
</tr>
<tr>
<td>Share with other household</td>
<td>46 (27)</td>
</tr>
<tr>
<td>Total</td>
<td>165 (100)</td>
</tr>
</tbody>
</table>

14.3.6 Bought food, what is bought and what is spent
The frequencies of shopping for groceries vary among the families. Most (52%) would go to buy groceries when they have money (Table 145) with the most commonly bought food items being rice and sago flour (Table 146). These are the two staple food of the Penan. The next most popular item is sugar, which is usually consumed with their drinks. Flour seems to be a rare purchase suggesting that the Penan as yet have no use of flour. A considerable number (67%) of the families use cooking oil on regular basis (Figure 141).

Table 145 Frequency of buying groceries

<table>
<thead>
<tr>
<th>Frequency of shopping for food</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once a week</td>
<td>37 (22)</td>
</tr>
<tr>
<td>Once a month</td>
<td>29 (17)</td>
</tr>
<tr>
<td>Once a week</td>
<td>13 (7)</td>
</tr>
<tr>
<td>Whenever there is money</td>
<td>86 (52)</td>
</tr>
<tr>
<td>Total</td>
<td>165 (100)</td>
</tr>
</tbody>
</table>
Figure 141 Store-bought items are becoming an increasing part of the diet.

Table 146 Food items commonly and rarely purchased

<table>
<thead>
<tr>
<th>Food</th>
<th>Commonly purchased (%)</th>
<th>Rarely purchased (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>158 (95)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>Sugar</td>
<td>89 (53)</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Flour</td>
<td>6 (3)</td>
<td>155 (94)</td>
</tr>
<tr>
<td>Meat</td>
<td>11 (6)</td>
<td>137 (83)</td>
</tr>
<tr>
<td>Sago</td>
<td>113 (68)</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Cooking oil</td>
<td>28 (17)</td>
<td>3 (2)</td>
</tr>
</tbody>
</table>

14.4 Health Services

14.4.1 Government health services and health programs

The Sarawak Health Department provides health care services to the Murum area through its clinic in Belaga and now in Asap. The clinic in Asap is a standard rural clinic, staffed by paramedics, nurses and public health inspectors and other support staff. This clinic provides outpatient care, maternal and child health care and a host of other preventive programmes. In addition to the static clinics, outreach services such as the mobile Village Health Team and the Flying Doctor Services have been implemented for many years now. According to the head of the Asap clinic, the mobile village health team now visit each of the longhouses at least once a month.

In each of the longhouses the Health Department have trained a pair of health care volunteers under the community based primary health care programme. This programme, which was established in Sarawak in 1983, involves volunteers who have been selected by the community to undergo training for three weeks in basic medical care. These volunteers are known as Wakil Kesihatan Kampung (WKK) (Village Health Promoters) (Sarawak Health Department, 1984). The Wakil Kesihatan Kampung from Murum area has been trained in KK Asap. A total of 12 Penan from Murum have been trained as WKK since 1984 (Table 147). However, only 7 of these WKK are still active, including one from the first batch of WKK trained in 1984. These volunteers serve as the “link” between the community and the health department and
provide first aid and treatment of simple ailments. However, based on discussions with the longhouse elders, the role of the Wakil Kesihatan Kampung (WKK) appeared somewhat indistinct. In fact not much importance seems to be attached to them by the longhouse elders. By contrast the WKK's in many Iban longhouses in Kapit Division have played a prominent role in uplifting the health status of the people and as a result they have been accorded certain prominence in the community.

Table 147 WKK who are still active in Murum area, 2010

<table>
<thead>
<tr>
<th>Name of WKK</th>
<th>Year trained</th>
<th>Long house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saran Joo</td>
<td>1984</td>
<td>Long Wat</td>
</tr>
<tr>
<td>Ronny Ngo</td>
<td>2007</td>
<td>Long Menapa</td>
</tr>
<tr>
<td>Nyipa Ingan</td>
<td>2007</td>
<td>Long Jek</td>
</tr>
<tr>
<td>Ugil Beti</td>
<td>2007</td>
<td>Long Peran</td>
</tr>
<tr>
<td>Dywa Saran</td>
<td>2008</td>
<td>Long Wat</td>
</tr>
<tr>
<td>David Beran</td>
<td>2008</td>
<td>Long Luar,</td>
</tr>
<tr>
<td>Azam Sue</td>
<td>2008</td>
<td>Long Tangau,</td>
</tr>
</tbody>
</table>

Source: Laporan WKK Penan, Pejabat Kesihatan Bahagian, Kapit

Another important health programme in this area is the Malaria Control programme. Malaria is endemic in this area and in 2008, 36 cases of Malaria were reported. In 2009, only 12 cases were reported (Divisional Health Office, 2010).

14.4.2 Community access to health clinics
The nearest clinic for all the longhouses in the Murum area is located in Sungai Asap. Even though as a government clinic the service is free, the physical access to this clinic for the Penan is a major problem. There is no public transport available and the only means of transport is by getting lift from whatever vehicle is available (normally the Timber Company’s vehicles). From the nearest longhouses, Long Jek and Long Peran it takes about two hours to reach the clinic, while from the farthest long house, Long Luar, the trip to the clinic takes about six hours.

The only non-government health clinic in this area is in one of the logging camps This clinic, which is staffed by paramedic, only provides emergency care for the workers and is not accessible to the Penan except in dire emergency.

14.4.3 Longhouse demand on health services
One of the requests from the Murum Penan is for a government clinic providing basic services such as those provided by KK Asap. This view is shared by all the longhouse elders and was expressed during the discussion with the researchers. They know the importance of sending their children and pregnant women for regular check-ups at KK Asap but the distance and the lack of transport is a major hindrance.

To them the outreach programme provided by KK Asap is not satisfactory, as this service does not provide the wider range of services, as does the static clinic. Furthermore, to them this service (only once a month) is not frequent enough. This demand is not without merit as the urgent need of the Penan besides food and shelter is good health care delivery services. A clinic in their midst would serve this purpose.

14.4.4 How people manage in a health emergency
Emergencies (usually cases of occupational injuries, severe fever and severe abdominal pain) are usually sent to Asap and from there referred for further treatment to Bintulu Hospital. The trip to Bintulu Hospital, using a well-equipped ambulance, normally takes about two hours from Sungai Asap. The time taken to reach Asap
from the longhouse may take longer than the times outlined as the family has to first secure transport; not an easy task.

Women in labour may be considered an emergency but for the Penan in Murum they handle these emergencies on their own. In these instances, the Traditional Birth Attendants (TBAs) in each of the longhouse conduct the delivery. In the absence of access to modern and safe methods of conducting delivery, this is the only option. Provided there are no complications the midwives are experienced and capable of assisting with the childbirth.

14.4.5 Penan views towards modern health and medicines

There is an increasing acceptance regarding the importance of public and personal hygiene. The evidence of this is in the efforts to keep public spaces in the longhouse clean and the care taken for maintaining basic personal hygiene such as hand washing. All except four of the 165 respondents interviewed understood the importance of washing hands after going to the toilets and before every meal. Similarly, all except four of the respondents practiced hand washing after going to the toilet and before every meal.

The Penan generally view modern medicine as superior to the traditional medicine. Ninety-five percent of the respondents would choose the clinics as their treatment destination of choice. Only 8 respondents (4%) would choose traditional medicine as their first choice if they were ill. Even then, they would have no qualm in going to the clinic if the treatment using traditional medicine fails.

14.5 Traditional medicine and health practices

14.5.1 Views regarding traditional medicines

The Penan of the Murum area have virtually abandoned the use of traditional medicine. The majority of the respondents (88.5%) interviewed have never used traditional medicine and for those (11%) that have used traditional medicine, they only used them for minor ailments such as stomach ache. All those who claimed to have used traditional medicine administered the treatment themselves. Except for Long Menapa, none of the other longhouses claim to have any traditional healers among them. Even for Long Menapa, the acknowledged traditional healer is not really practicing the arts anymore.

Malaria has been quoted by (56%) of the respondents as one of the diseases among the "banyak penyakit", for which they can't list and for which there is no local treatment.

The majority (84%) of the respondents interviewed preferred using the modern medicine if they had the option.

None of the longhouse elders interviewed admitted to knowing of any traditional healing practices in their community. Everyone insisted all those who were ill were sent to the nearest clinic, which is KK Asap.

14.5.2 Care of the elderly, infirm and chronically ill

The immediate family of the elderly, infirm and the chronically ill is largely responsible for their care. A communal approach in the management of these groups of people is not a common practice though it did take place when the immediate family were unable to cope and asked for help.

Except for the people of Long Luar none have seen any mentally ill people among them. The staff of KK Asap confirmed this as well. The lone known mental patient in Long Luar has been dead for sometime and this patient was looked after by the immediate family and the others in the longhouse helped in making sure he didn’t do any harm to others and any damage to properties.
14.6 Illnesses

14.6.1 Common illnesses that afflict adults and children

All the village elders agreed that the most common illness afflicting the adults is fever, epigastric pain and general body ache. They cannot really tell the exact numbers but they said that many people are suffering from at least one of these conditions most of the time. The staff of KK Asap and the personnel who run the Flying Doctor Service in the area confirms this.

Fever and running nose seems to be the most common conditions according to their observations. At times diarrhoea among children was common too.

14.6.2 Estimates of infant mortality

The people in each of the longhouse gave the impression that they have high infant deaths, however this cannot be confirmed. There are no reliable statistics available on infant death in this area. The health department staff is of the opinion that infant death among the Penan is relatively higher compared to other ethnic group (Personal communication). Based on longhouse interviews of 165 respondents there were 27 deaths within the last 5 years. Not all of these were infants and it is estimated that about half of these deaths were infants.

14.6.3 Illnesses that Penan believe are on the increase

In general the Penan believe that "Sakit nyamuk" or malaria is on the increase. To them anybody with fever is likely to be suffering from malaria. This high level of suspicion is not surprising as malaria is endemic in this area. However, the latest report from the Vector Borne Disease control Unit at the State Health Department shows that the number of cases reported in this area in 2009 has decreased greatly compared to 2008.

14.6.4 Illnesses that Penan believe are declining

There is the overall impression that conditions such as diarrhoea and skin diseases, which used to be common in the past, are on the decline. According to the health personnel scabies used to be very common in the past but now is very much reduced. The main reason for this improvement has been attributed to and overall improvement in personal hygiene among the Penan.

14.6.5 Apparent changes in Penan health

Due to the lack of historical date, it is difficult to quantify any changes in the health of the Penan besides an apparent overall reduction in mortality. The overall health status of the Penan appears to have improved. From the observations of the health personnel in the area, the basic personnel hygiene has improved in certain aspects. The common diseases of earlier years such as diarrhoea and worm infestations are no longer commonplace. With the introduction by the Health Department of Insecticide treated mosquito nets (ITN) the risk of malaria has been reduced. However, the Penan are still subjected to many health risks. The risk of non-communicable diseases such as lung cancer and liver cirrhosis is most likely to be on the rise as tobacco use and alcohol consumption among the Penan never seems to go down. In fact it has been observed that improvement in purchasing power leads to increase in both tobacco use and consumption of alcohol.

14.7 Conclusions on health

Like everyone else Penan view health as a very important asset. They know only too well that if they are not healthy their body will be to weak to go to work or to go looking for food. There are some vague ideas about the impacts of pollution on the river as being bad for health, but this pollution has been mainly linked to the lack of fish.
There is no tension between traditional and modern health systems as they readily accept modern health systems. All the health programmes introduced by the Health Department have received good response, although sustaining the support for these programmes over the long term is an issue. The fact that some of the programmes introduced into this area in 1980’s still survive (e.g. the WKK Programme) is a positive sign for what is possible.

The key health challenges in the Penan community are as follows:

- Reducing malnutrition among those aged below 7 years. This is not a purely Health Department issue as it has to do with food availability and a number of other health determinants.

- Improving environmental sanitation - The most immediate task is to provide sanitary latrines for every household. The technology for this, which is cheap and appropriate for them, is available in the form of pour flush latrines.

- Reducing the risk of infant and maternal mortality - As long as the problem of access to the clinics is not solved home delivery conducted by the TBA’s will continue.

- Reducing the risk of vaccine-preventable diseases - Immunisation coverage among the infants is not as high as it should be. Many factors account for this. Access to health clinics is one of them. The outbreak of measles in Urun area in 2005 that led to 13 deaths underscores the importance of getting all the children immunised.

- Reducing the risk of non-communicable diseases - Smoking is a well-known habit among the Penan. Though the incidence of lung cancer among the Penan is not known the risk is obvious. The same applies to alcohol consumption. There is a tendency to start drinking at early age and often consume large amount of alcohol.

- Prevention of malaria – Malaria is endemic in the area and underscores the need for Health Department extension work to improve sanitation and living conditions around the longhouse to control vectors and to provide medication as required. The most important approach in preventing malaria among the Penan is through behavioural change.

### 14.7.1 Health anxieties among the Penan

Lack of food and dwindling food sources (i.e. the forest) is the greatest health anxiety among the Penan. Another important consideration is the well being of infants and children. There is an acute awareness that the children are not growing well and often falling sick and the Penan feel that the government should do something about this. Nutritional intervention programmes are required coupled with community health programmes are required to arrest this situation.

Apart from the infants and the children the Penan do not seem to be concerned about the other vulnerable group, the elderly. They seem to be content with the way it is. However there is a real need to focus on this and more discussions should be held.

The Penan in all the communities were unanimous in their request for clinics located close to the community. The preferred health service for them is one, which is easily accessible. The clinic in Asap does not fulfil this requirement.
15 PENAN EDUCATION

15.1 Introduction to Murum Penan education
Studies on the education aspects were conducted during November and December of 2009 in the Penan communities, in the Plieran and Murum/Danum rivers systems. In addition to the educational aspects, the history of education for the region, the current state of education and the views of these communities on educational matters were investigated. The views of the community are seen as particularly important in terms of what they see should be the role of formal education in shaping their children’s future.

During the introductory meeting with the Penan leaders in October 2009 in Asap, it was learned that a significant proportion of the Long Wat village population are in Asap. This satellite community numbers well over one hundred, not including the children who are in school and is in Asap to “take care” of their children/grandchildren who are in either SMK Bakun, or in SK Batu Keling in Asap. The schools and the Penan who live in buildings once used as a chicken farm houses, now converted into their (Penan) home in Asap were also included as part of the overall study.

The communities being studied have been dwelling in the two rivers systems for generations, since the rule of the Brookes. Until recently, with the advent of timber extraction and plantation establishment, these communities were very remote, accessible only by long boat and walking journeys from Belaga. There is no school for the eight Penan villages in the Danum, Plieran and Seping River system. The community leaders report that they have applied to the authority for a school in the Murum area, but to date there is no success.

15.2 Penan pursuit of literacy through self-learning
In spite of their sizeable population of over one thousand five hundred people, the remoteness of these communities has prevented any schools from being established. In spite of this, many of the inhabitants of the areas have shown a great hunger to learn and a desire to go to school. The absence of basic school facilities has not however, stopped learning. Many young and older adults (mainly men) can read and write, elementary Bahasa Melayu, and Penan. The fact that almost every other person met during the course of the research is in some measure literate was truly intriguing. The findings related to how this was achieved are generalized below.

15.2.1 Self-learning
Many of the older group represented by the community leader, Penghulu Pao Tului (who is around sixty years old) went to Long Linau, and studied up to primary four. At that time, the school at the Penan village at Lusong Laku had not yet started. Penghulu Pao modestly reported, “A few men of my generation taught ourselves”. Usang, (sixty-eight years old), the assistant headman of Long Singu is a perfect example of the self-taught generation. His literate knowledge may be elementary, but he is a man of great talent. In music, he plays the sape very well, he is an accomplished oral historian, and he is knowledgeable about the art and craft of his people.

15.2.2 Primary education
Saran Joo, (forty-four years old), also went to Long Linau primary school in 1972 and then continued form one to form three in SMK Belaga. When the Penan Volunteer Corp (Sukarelawan), started in the latter part of 1980s he was recruited and was

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47 Boat Lute – four stringed musical instrument.
posted to his own village Long Wat after training. He served there until 2006 when
the support for the Service Corp ended and the literacy classes also subsequently
ended. During those years, he served in many capacities including as a "registrar of
births" when babies were delivered in the village. He was very keen to bring literacy
to the village and with the materials supplied by the government; he built a
schoolhouse and conducted literacy classes. The majority of the young adults and
school age children of his village attended his “school”. There was a zeal to learn and
many were good and fast learners. However, going beyond the village literacy
classes was out of the question.

15.2.3 Literacy classes conducted by churches.
Churches like the Sidang Injil Borneo (SIB) periodically conduct literacy classes for
their members. As a general practice, only leaders or potential leaders would attend
such a course. Once those who have attended such course have acquired basic
reading and writing skill they would often teach any of their fellow villagers, or friends,
who were keen to learn. This was how some years ago through a Kayan friend,
Nyipa Ingan (NRIC 630219133569) of Long Jek learned to read and write. At the
recommendation of the Ketua Kampung, Matu Tugang, Ingan was hired as an
education research assistant to do the head counting for every door at Long Jek.
The church groups also organise pre-school and children education classes held in
the communities (Figure 151). Funding for these classes comes from the churches
themselves or through the companies working in the area. These sessions are
invariably well received and well attended by the children. However, the length is
generally short (most often less than two weeks at a time and as short as a day) and
subject to funding and availability of people to conduct the classes. Most of the
people assisting are volunteers who have donated their time and are not necessarily
qualified teachers.

Figure 151 Pre-school and literacy classes organised in the community by
local church groups.

15.2.4 As a young couples hobby:
According to Saran Joo, many young married couples would also spend time by the
lamp teaching each other to read. This was confirmed during the surveys, as in
evening along the verandah, it was possible to see more young couple with books
than young people doing craft work. One of the first couples encountered in Long Wat was a young man who had finished form two in SMK Belaga. He was teaching his wife to read English. While this activity is indeed praiseworthy, it is possibly also a sign of the passing of a traditional culture; one where young adults used to spend time doing craft work, such as weaving of rattan into mats or basket. This activity appears to be limited mainly by the fact that many do not have reading or writing materials.

15.3 School opportunities prior to the Asap Settlement

Prior to the establishment of the Asap settlement in 1991, those wishing to send their children to school had essentially only two options.

- Sekolah Rendah Lusong Laku located at the Penan village of Lusong Laku, on the Linau River, or
- Sekolah Rendah Long Linau, located at a Kayan village at the confluence of the Linau and the Balui rivers.

These two schools were the nearest schools to those living in the Murum/Danum and Plieran rivers systems until 1991. In terms of distance, these schools are located hundreds of kilometres from the Murum / Plieran area. The only roads are timber roads, which are not built to serve the local population and required the Penan to request transport assistance from the logging companies. The other means of travelling to the schools was by rivers, but this method took days and depended on local weather conditions.

In the 1980s, the Penan children who were of school age would go to Lusong Laku, where there was a boarding house facility. This school was preferred as it was deemed to have a friendlier social environment being a Penan village. At Long Linau there was no boarding facility and the social environment was deemed (socially) less friendly to the Penan being a Kayan village. The primary school in Belaga was considered too far away, so was out of question, unless the child attending that school stayed with a relative living in Belaga.

15.4 New Schools at Sungai Asap

The work on the Bakun HEP started in the middle of the 1980s and thirteen Kayan, Kenyah and Penan long houses that would be inundated as a result of the dam had to be relocated. The area around Sungai Asap, a tributary of the Koyan and Belaga Rivers, was selected to be the location of the settlement, hence the name of the new population centre; Asap. Approximately, ten thousand people from the thirteen longhouses moved to Asap in 1991 and as befits the large population, a Medical Clinic and a primary and secondary school were provided for the area. There is also an administrative office headed by a Sarawak Administrative Officer (SAO) sited in one of the shop house blocks that serve as the main commercial centre of Asap.

In terms of education, one of the questions that needs to be considered (given that there are also people in the neighbouring river systems); Are the school facilities at Asap sufficient for the children from Asap and the children from the neighbouring areas? This is especially pertinent as many of the communities in the outlying areas presume they have a right to go to the schools in Asap. Thus, quite a number of the Long Wat children were enrolled in the Asap school. Unfortunately, there were insufficient places to meet the demand. According to Penghulu Pao Tului of Long Wat, at the end of 2008 he brought a group of children to register to be student in the school. They were rejected, with the reason being given that the school was already full. Furthermore, he was informed that the local Education Department had instructed the school to give preference to children who had gone through kindergarten. While the rationale for this was to ensure that the Penan children are on par with the others of their age group, the lack of kindergarten facilities places them at a distinct disadvantage.
15.4.1 Accessibility
Geographically, the Murum/Danum and Plieran rivers are closer to the Asap settlement than to Lusong Laku to the southwest. In addition, Asap is now also accessible by a timber road linked to Asap-Bakun road. The local people including the Penan now regard this particular road as the major highway linking the services they desire with the vast country further inland where they reside. The second nearest Penan village from Asap using this “highway” is Long Jek (about 100KM).

15.4.2 Education expectations today
Currently, the majority of the Penan of the Danum and Plieran rivers emphatically state that they would not send their children to the school at Lusong Laku. There are a number of considerations guiding this stand. Primarily, the distance—requiring a two-day journey—is just too difficult. With the direct access to Asap—albeit by timber road—the journey takes less than a day. Furthermore, there is a wide range of facilities at Asap including a kindergarten, a full primary school (SK Batu Keling) with boarding house facilities, and a secondary school (SMK Bakun). The primary school has boarding facilities and the secondary school, once completed, will also have boarding facilities. The understanding of the Penan communities in the Danum and Plieran is that the schools mentioned are as much for them as for anybody in Asap. Importantly, the communities of the Danum and Plieran see educational facilities are becoming more accessible in terms of geographical distance.

Even using the road links provided by the logging roads and the connections to the Bakun site, the Penan population in the Plieran and Murum/Danum rivers is still the hinterland to Asap. These communities also expect their children to go to the school in Asap, however the question remains whether the school facilities in Asap will be able to meet their expectations. When considering the Penan education expectations and the Asap facilities, the following factors need to be considered:

- The capacity of the kindergarten and primary schools at Asap;
- Whether there is sufficient capacity for the classes and boarding facilities in the Bakun secondary school at Asap to include those from outlying areas;

Furthermore, there are a number of other issues associated with the Penan communities be overcome:

- Distance from home for young Penan children (< 10 years old) staying as boarders;
- Safety during transport on private timber company’s four-wheel vehicles, traversing rough timber roads for hours;
- The lack of scheduled public transport resulting in the uncertainty of the travel; and
- The financial constraints faced by parents of the students going so far from home in order to go to school.

15.4.3 Constraints to be overcome

School Capacity
While the school in Asap has provided an education opportunity that is closer to the communities in the Murum area and a number of Long Wat children attend the school, the question still remains why are there still many more children of school age not going to the school in Asap. Responses to this question from the community revealed a number of reasons for this situation.

In addition to the children who are already in school in Asap, many more went to apply for places. However, they were told that the school is already full and in many instances over-capacity. Those children that were accepted were those who went to
Kindergarten and applied much earlier, during their final year of kindergarten. This situation places the other communities at a distinct disadvantage.

Many parents would not leave their young children in school, even though they are in boarding school. As a result, about half of the community of Long Wat is in temporary residence in Asap with the parents and grandparents accompanying their children. An overriding worry in the community is that if all the children were accepted in school, the village may be empty. A further concern is that overcrowding in the Asap temporary settlement may lead to other social problems.

According to the Penghulu, there have been four requests for a school made in recent years. The last request was made through a political secretary to the YAB The Chief Minister. The political secretary assured the Penghulu that he (the political secretary) delivered the letter personally to the YAB who gave instruction to his officers to look into the request.

Through the interviews with the community on the education matters a number of key points with regards to education have emerged:

- The Penan have long recognized the value of education as a means to adapt to the changes around them.
- Generally, committed parents undertake the long, difficult journeys required to send their exceptionally motivated young children to school for kindergarten and then to primary one;
- Geographical, social and economic factors have all worked against the Penan keeping them on the outside margins of the available educational services.

For the Penan children of the Danum, Plieran and Seping areas to benefit from education, there must be schools in or easily accessible from their villages.

15.5 Current Policy for Education

Education in Malaysia is a federal matter therefore the policy in force is common for all parts of the country. The curriculum is also common for all schools, with minor variations in the elective subjects for different school.

The role of the Education Ministry is to provide education opportunities for all Malaysians and this includes the Penan. The other objectives for education in the country can be stated as follows:

- To produce loyal and united Malaysians;
- To produce knowledgeable individuals with high moral standards;
- To provide human resources for the needs and development of the nation.

There have been no comprehensive and in-depth studies on Penan Education. However, observations of the factors that result in the high dropout rates have been the focus of interest of a number of studies. Among these, Daniel Levooh Emang, a headmaster who pioneered a Penan school in 1984 in Belaga district and academic Peter Brosius (1988: 168-169) concurred that surrogate parenting of Penan kids in boarding school is an essential need to keep them in school. While such observations were on a specific group of Penan, the recommendation may be applicable to the wider group of Penan in the Danum, Plieran and Seping Rivers.

All Penan elders interviewed during the study, considered education as the most powerful agent of change and a source of high motivation for the Penan. Thus, it would appear that there is the motivation to go school on the part of both the parents and the children. To keep the children in school a number of key factors need so be considered, including some form of surrogate parenting as well as providing an attractive learning environment by the educators and parents. There is a need to ensure that the local educational authority works together with parents and teachers towards the objectives outlined by the Ministry of Education.
There has been a great deal of change to the environment of the Penan. The forest is no longer what it was and even the physical structure of their homes tends now to be longhouse-style like the other native groups. The Penan have become farmers growing food crops and selling produce. The days when the forest and rivers were their "refrigerators" are gone. The Penan fully understand the scope of these changes and are in fact re-orientating their own mindset in order to cope and survive. The main issue will be how fast and how well that reorientation is made at the individual and community level. Getting started and maintaining sufficient stability to progress is the big hurdle. There is a need for guidance and expertise to assist in the changes and support the transition from their old economy to the new. This expertise and guidance needs to be extended to all aspects of the Penan lives, including public education and home management.

There is no denying the Penan knowledge about the forest, however they have had a late start in formal education. Even those living along the Suai and Jelalong river systems—geographically nearer to towns like Bintulu, Suai and Niah—are not much better off compared to those in the sources of the Baram and Balui. Since as a group they are behind others, the local educational authority should be investigating methods to bring address the shortcomings in the delivery of the education and bring this group into the educational mainstream. Given their general lack of access to schools, Penan students should be given preference for places in full boarding schools. Accordingly, in 2006 all the 57 students in the Secondary School level in Belaga District were admitted to SMK Belaga.

The other form of special preference extended to the Penan students is the yearly financial assistance to assist them buying their uniforms, stationary, and to cover transport fees to and from school during the long holidays. Thus, all the Penan students who can provide enough evidence of their home condition are given this financial aid through Kumpulan Wang Amanah Pelajar Miskin (Kwamp). In 2006 at SK Batu Keling, Asap, seven out of nine students received financial aid. In that year, of the 1,653 Penan students throughout Sarawak, 662 (40%) received financial aid. In 2010, all three Penan pupils in SK Batu Lintang, Kuching, received aid.

Penan students are also given textbooks on loan, as the other poor children of other races.

15.6 Past and present success in primary and secondary school

The past and present performance of the Penan in primary and secondary schools is summarized in Table 151 below. The six Penan villages and one Kenyah village in this table are located in the area to be inundated due to the impoundment of the Murum dam. Although the other two Penan villages, Long Jek and Ba Peran will be above the water level and not affected, the enrolment of these three villages are included in the table. The total population of the nine villages is 1,721. The cumulative number enrolled in the formal school system to date and presumed literate is 133 or 9.5%.

Table 151 Summary of Educational Attainment for Nine Villages in the Danum and Plieran rivers.

<table>
<thead>
<tr>
<th>Education</th>
<th>Long Wat (P)</th>
<th>Long Malim (K)</th>
<th>Long Singau</th>
<th>Long Tangau</th>
<th>Long Luar</th>
<th>Long Mengapa</th>
<th>Long Jek</th>
<th>Ba Peran</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>University / Post 2nd training</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Form 6: Upper</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Upper Secondary : Form 5</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
The total number of persons who have been through some form of formal education system, and are deemed literate is 164 persons or 9.5% of the population. These figures include the Kenyah at Long Malim (*). Excluding the Long Malim Kenyah from the calculation, the literacy levels of the Penan are low with only 133 persons (or 8.7% of the total population) having had some formal education.

The number of children who were actually in school in 2009 was 33 Penan (just 2% of the total population) and 15 Kenyah (8% of the total Kenyah population) (Table 152). The 33 Penan students are children of the people from Long Wat who went to live in Asap to be close to their children in school. Only two other Penan children (one from Long Malim and one from Long Singu) were in school.

A glaring fact is that the school going age children from the other villages that should be in school are no longer in school. This represents 100% drop out rate for five out of eight villages. The reasons given by all students for this high drop out rate related to no money and no transport to get to school.

### Table 152 Number of Danum and Plieran children participating in formal education in 2009.

<table>
<thead>
<tr>
<th>Community</th>
<th>Population</th>
<th>Number in school (2009)</th>
<th>Percent of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Wat (A &amp; B)</td>
<td>321</td>
<td>31</td>
<td>9.6%</td>
</tr>
<tr>
<td>Long Malim (P)</td>
<td>205</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Long Malim (K)</td>
<td>190</td>
<td>15</td>
<td>7.8%</td>
</tr>
<tr>
<td>Long Singu</td>
<td>248</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>102</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Long Luar</td>
<td>190</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>152</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Long Jek</td>
<td>171</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Ba'/Long Peran</td>
<td>142</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1721</strong></td>
<td><strong>48</strong></td>
<td><strong>2.7%</strong></td>
</tr>
</tbody>
</table>
15.6.1 Addressing the High Dropout Rates.

One of the main challenges to overcome with respect to education is the obviously very high rate of school dropout. Of the students whose parents are living in the village, only one was able to finish form five. Two others dropped out at form four. The other three who sat for SPM at form five are indeed children of Penan from Long Wat, but their parents have been living permanently in Asap. The story is much the same for the sole Penan who managed to complete University; although his origin was Long Wat, his parents had been living in another community close to a school. Among those interviewed, sixteen students went up to form three and the rest dropped out at various stages. When these dropouts were asked why they did not continue schooling, the reasons given were generally: no transport and no money.

In addition to the two main reasons mentioned above for dropping out, the Penan success and failure to go to primary and secondary school also depends on the combined motivation and determination of the children and parents. The case illustrating this point was seen at Long Malim, the furthest village from the schools at Asap. Some parents are determined to put their children through school. Together with some Kenyah parents, these parents have attempted to make arrangements with the workers of the timber camps for transport to Asap before school starts at the beginning of the year. Unfortunately, these arrangements were not always successful. Sometimes the children would wait at the main road for hours and if the transport did not come by mid afternoon, they would walk back to the village, returning to wait again early the next day. When asked of their view of such uncertainty of the transport, they replied, “We are asking for their favour. They are doing their business and if they do not come as agreed, it must be because of their other commitments, or an occurrence of unforeseen things.”

Based on the interviews of the students and parents it was deduced that the most important factors contributing to dropping out from school among the Penan are:

- The distance of their homes from school. The nearest Penan village (Long Peran) is 90 kilometers away from Asap along mainly timber roads while the furthest (Long Malim) is approximately 250 kilometers away.
- The mode of travel is uncertain, depending on the convenience of vehicle owners;
- The financial cost of the travel is a heavy burden;
- The financial constraints on the family and the opportunity cost on the parents, in terms of money and time is heavy.
- Insecurity faced during their journey, especially when none of their parents are with them. A few secondary school students had the story of being stranded on the way when coming home from SMK Belaga, having no place to stay and no food until some kind souls took pity on them.

Other reasons for dropping out included problems in school such as not doing well in their studies, especially after a period of absence in school due to transport problems. Being bullied by other children was not seen as a problem. Those interviewed said they did well at their studies, albeit not top students and they enjoyed schooling and liked living in the boarding house. Besides there were sports and games in which the more athletics among them may participate.

When queried further whether the Penan children had been victims of bullying, most stated that bullying was rare. Being bullied was not based on race, but more on personality. Those interviewed explained “If some boys do not like someone, then they start finding faults with that person. We Penan boys do not do that, and we avoid becoming a target of dislike”.

Based on the interviews and the statements from the older and secondary students, poverty and the great distance to school are the two main reasons for them to drop
out from school. They are aware of their parents support, but they have to face reality.

15.7 Current Situation.

15.7.1 Nearest School.
The nearest primary and secondary schools are at Asap, accessible by timber road about 150 km from Long Wat. The nearest Penan village to the schools is Long Peran, located 90 km from Asap. Long Malim is the furthest away from Asap and at 250 km away, takes at least five hours journey. The secondary school in Asap is SMK Bakun and in 2009 there were nine Penan students; children of those living in Asap. The school is still under construction and pending completion the school is housed in Sekolah Kebangsaan (SK) Batu Keling, Asap. In 2009 a total of 32 Penan pupils attended SK Batu Keling of which 27 were from Long Wat, two from Uma Nyaving (one originally came from Long Wat), one from Uma Daro and one Uma Balui Liko.

There are currently 389 children between the age of six and thirteen years old. This is the group who should be in primary school attending levels primary one to six in 2009. Because of the Long Wat satellite community in Asap, the actual number of Penan children in primary school in 2009 was 32 meaning that 357 children of primary school age were not in school. Of the 247 who should be in secondary school, only two were in school in 2009. This means that 99% have forgone the chance of education. Figure 152 clearly shows that the bulk of the population of the area is young and provides an indication of the educational facilities required to serve the Murum valley population. If there are no education facilities provided, the illiteracy problem will be compounded.

![Murum population by age](image)

**Figure 152** Murum valley Penan community by age class.

Key points to be noted with this data include the following:
• Toddlers and pre-school children (ages <3 years) number 224;
• Kindergarten age children (ages 4–5 years) number 104; 50 children are seven years old and should be in primary I;
• Schooling age children (ages 8–17 years) number 464. Added together with the 50 children in the seven-year-old category, the total is 514 children.
• There are 79 young adults ages between 18 and 19 years old that should have been in upper secondary school.
• **Thus, the number of children that should be in school (or the number for which facilities are needed) total 593 (514+79). This does not include the 102 children of kindergarten age (5–6 years old).**

15.7.2 **Parent participation in schooling**

The Penan parents have demonstrated their support and participation in their children’s education in a number of ways including:

• Physically moving to live near the children’s school.
• Providing the care, moral support and financial assistance, as they are able.

Case in point are the over twenty families from Long Wat who have relocated to stay in makeshift homes near Uma Nyaving in order to be close to their children/grandchildren in school. Their homes/houses in Long Wat were empty when head counting was made.

Another example is that of Mr. Lagu of Long Malim who has resolved to put his children through school. One of his sons has completed form five. That is the only boy who stayed on in school because of his parents who stay in the village unconditional support.

The only degree holder from among the Danum Penan (Long Wat) attended primary school at the estate where his father worked. By the time he went to SMK Belaga, his parents had made an arrangement to ensure that his needs were taken care of and he was able to stay in school. By then he was capable of taking care of himself. This case illustrates that proximity of the child’s home to his school at the primary school stage is essential to provide the necessary support the child needs.

The general feeling among the Penan parents is that it is very unwise to send children below ten years old away to a school hundred of kilometers away. This stance if further supported given the uncertainty of the transport and the travel over rugged and often unsafe timber roads. Even staying in boarding schools, children within the primary school age group would normally find it difficult to adapt to new surroundings and people; much less to take care of themselves. Therefore, in order to encourage their children to go to school, parents actually accompany their children. After enrolling their children in school, and safely settling them in their hostel, these parents go to live in temporary homes within easy reach of the school. This is the situation for the 22 family units from Long Wat living in the Asap settlement. From the temporary housing, they seek odd labour jobs to survive.

These parents/grandparents have sacrificed the familiar socio-economic life of their village, where they have homes of their own and a means of support. They have uprooted themselves and stayed in a borrowed place, in an environment not necessarily better than their homes. What effect this migratory life has on them and their offspring will only be revealed in the long-term.

In contrast to the Long Wat situation none of the parents from the other villages were absent on account of their children in school. At Long Singu for instance every head of the family was present. The total number of children and young people in the age group 7 to 16 years was 78. There were 20 children below two years and 39 between 3 to 6 years (the play school and kindergarten years) for a total of 137 children. This
means that for Long Singu a total of 137 children will potentially end up as illiterate or semi illiterate labour force if these children are not schooled. In the modern economy with the demands for high levels of knowledge and the capacity to learn fast, the illiterate group are among the most unemployable people. The only option for this group is to take simple and lowly paid jobs with the result that they remain poor and susceptible greater poverty. Having nothing better to look forward to, these young Penan marry early. There are many teen-age parents in the villages and in the light of the fast-changing socio-economic and physical changes in the environment; more children born to young and illiterate parents will certainly compound future problems. A vicious circle of poverty will be the inevitable result with further financial restrictions for not sending children to school. The Long Singu case is representative of all the villages except Long Wat (Table 153).

### Table 153 School attendance of various age groups in Long Singu

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Gender: M/F</th>
<th>Total</th>
<th>Number in School</th>
<th>Number Not in School: illiterate or semi literate</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-23</td>
<td>3 7</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>20-21</td>
<td>5 5</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>18-19</td>
<td>9 8</td>
<td>17</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>16-17</td>
<td>3 7</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>14-15</td>
<td>8 7</td>
<td>15</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>12-13</td>
<td>8 7</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>10-11</td>
<td>7 2</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>8-9</td>
<td>11 8</td>
<td>19</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>6-7</td>
<td>8 2</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>4-5</td>
<td>9 13</td>
<td>22</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>2-3 yrs</td>
<td>11 6</td>
<td>17</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>0-1 yrs</td>
<td>11 9</td>
<td>20</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>174</td>
<td>1</td>
<td>173</td>
</tr>
</tbody>
</table>

The age group up to 23 years old is included to provide an indication of the numbers that have recently forgone the opportunity of education up to tertiary level. There was only one student older than 15 years in the village still in school at the time of the study. The rest (17 others) have dropped out of school and may be considered as semi-literate. Therefore the 173 young people will end up illiterate or at best semi-literate, if education facilities are not made available for them. They will also face difficulty in finding employment should no training facilities be provided.

**Recommendation:** There is an urgent need for kindergarten and lower primary schools (at least primary one to four) in each of the Penan villages. An upper primary school, from primary five and six, with boarding facilities may be located centrally, adjacent to a secondary school for the Penan in the Danum/Plieran/Seping area.

### 15.8 Penan Participation in Modern education

#### 15.8.1 Teachers, teaching and language

The young people interviewed (mainly those who had dropped out) had no comment on the language used in schools. Bahasa Malaysia is generally accepted as fait accompli the language of the national education. When asked if they would prefer teachers teaching them in their own language, all replied that would make them "less educated" as they would not learn another language. Even the older adults...
commented that schooling is learning other’s language and knowledge outside their own.

Regarding the teaching methods; without the basic knowledge of pedagogy, many who were interviewed said that a teacher is good if they do not go to sleep during the class, especially in the afternoon. Bad teachers are those who constantly shout or speak very loud to keep people listening. “Our parents speak quietly when they teach us things” was the yardstick of their judgment for effective teaching.

Those interviewed were of the general opinion that a teacher is good and respectable if he or she provides the following to the student:

- Personal attention from time to time;
- Makes them feel part of the class and school by assigning them specific responsibilities and roles to play in the group;
- Makes his rules and instructions clear;
- Friendly but firm; and
- Knowledgeable.

The older members of the community like Saran Joo recalled how hard working his teachers were, and how keen was their desire for the students to understand the lesson so that they (students) could climb the academic ladder.

The Penan perceive the teacher as a source of knowledge, a guide and a friend. There is no evidence of discrimination, be it cultural or social, for the Penan kids in classes of mixed race. The stories of Penan children simply disappearing from class to go off and wander in the jungle nearby are something of the past, and most likely exaggerated.

15.8.2 Penan understanding of the purpose of education.

The Long Wat group at Uma Nyaving in Asap, firmly stated that the future of their children lies in their education. Paneh, the leader of that group stated, “We were nomadic and living in the jungle when I was young. We became longhouse dwellers and learned to farm since I was a young adult. Today I want my grandchildren to move with the rest of the people. The way is to give them education.”

Paneh went on to explain that, “To move with the rest of the people means to be able to secure and retain a good paying job, to have steady income, to be sure that there is always enough food for the family, and some freedom to be oneself.”

The majority of the other Penan interviewed in the Danum/Plieran/Seuing spoke about the purpose of education as necessary, “So that I can get work in timber camp, or in Bintulu…or anywhere there is job.” Job, income, freedom from fear of hunger, the fulfillment of basic needs, is paramount in their minds.

The women interviewed regarding education tended to provide responses that were somewhat less focused on the security issues outlined by the men. This could be due to the lack of a female role model for them on this matter. There is no means to see or communicate with outside world so it is difficult for the women to have idea what they can aspire to or attain. In this regard, there is urgent need for wider public education and dissemination of information. The Penan Volunteer Corp, (Sukrelawan) was a good programme and provide something in terms of education and outlook for the Penan. The volunteer Corp brought not only vegetables seeds and ideas about farming but also information on general and village health. These positive actions need to be supported, expanded and continued.

One of the big challenges educationally, is how to sustain the Penan’s overall development. The educational facilities (beginning from kindergarten, primary and secondary schools, technical training) are just the start; motivating the people to continue learning new skills and new knowledge to keep up with the modern world.
will be the indicator of success. In this regard, it is recommended that an important education element to be incorporated for the Penan (and for the rural population in general) is the internalization of the concept of lifelong education. This needs to be linked with career or job opportunities and advancement.

### 15.8.3 Numeracy and literacy, learning strength and weaknesses.

In general terms, numeracy is not one of Penan strong points. During the study, two approaches were used to assess this; namely observation and simple tests in conversation. The observation approach was carried out during daily interactions. In exchanges of goods, and even in the sale of items, the unit value is very rarely mentioned. However, if there is a need to remember the numbers involved an adult Penan will use the multiple leaves of fern to keep his record, so that he counts correctly. As an illustration, a lady had a number of items for sale, including a big mat. The buyer wanted to be fair in the amount paid and asked how many days it took to make the mat, how much her labour cost, the value of the rattan used and the value of each item. The seller ignored the question and just mentioned the price, RM100. One hundred ringgits may be a lot of money to her, but it was definitely low for the items she was selling.

For learning in general like literacy and crafts, the Penan show high capability. This is in the circumstances where there is a need to be accepted and esteemed by peers. Those who learn to read and write by self-learning are a very good example of this high capability to learn. In this context, the Penan like most other human beings need to be motivated to achieve in order to perform well at their tasks, including literate learning.

### 15.8.4 Educational achievement

The data presented on school enrollment is actually a description of a dismal failure. This is not a failure on the part of the community but on the part of the education authority. The oft quoted figures by the education authorities state that Malaysia’s literacy rate is above ninety percent with free education for all until form five (about 18 years old). However, in the Murum valley the authority has failed miserably. There is not even one school for the eight villages, where more than 1,500 people live. In other words these people have been marginalized. The 10% of the population who did manage to go to school, did so on their own effort. As far as could be ascertained, there has been little or no input or encouragement from the authority. The Penan of the Murum put their children into school on their own initiative, despite great distances, untold hardship in the travel, and great sacrifices for their family. Considering their disadvantaged position 10% is regarded as highly credible. The points listed below should make the picture of their disadvantaged position clearer.

- The geographical region where they are living is very remote. The route coming to the nearest population center, Asap, involves “crossing mountain and river valleys”. Only by timber road, or long river journey that one can reach the area.
- The transport facility: land transport is only possible or available if the timber workers/operators are generous and willing to go out of their way to help the local people, the Penan;
- Their source of income and food supply. The people of the Murum valley are obviously very poor and living well below poverty line. Ironically, these hard core poor live in an area that is very rich, once full of timber and now being converted to plantation. However, it is the outsider to their environment who harvest, and become wealthy, not them. The local Penan have no share, except for precious few who are taken as workers. A few actually bemoan the fact that some job they (the Penan) could do are given to foreigners. Thus they are the hard-core poor living in an area of prosperity.
• Supply of clean water and electricity: Some village have generators but no diesel. So the Penan cannot supply the basic requirement of “modern” way of living of having bright light. Although they accept the visitors contribution of diesel for the village’s generator while staying in the village, yet it is possible that the Penan’s self respect and pride is severely eroded. In some villages, piped water supply has been installed. But these seem to be at odd places, like under the kitchen. Perhaps this is one example where the more “cultured” advisor can advise these folks what water is for cooking, washing so help them to keep healthy.

• The schools. Located not in the villages, but hundreds of kilometers away, through jungle tract and timber roads.

Despite all these constraints, and many more socio-economic problems, some go to school. That is the indisputable evidence of desire to learn in school.

15.8.5 Penan aspiration in education.
The Penan of the Murum valley do have high aspirations in education and see it as essential to cope with the changes around them. Evidence for this is their modest achievements in literacy and their efforts to get their children in school. However, in spite of their desire for education for their children, they are faced with a number of constraints and challenges. These can be summarized as follows:

• The availability of facilities and the accessibility to these facilities;
• The relevance of the education received compared to the ambient situation of their villages, which are on the geographical and social margin of society; and
• The adequacy of education to help them become “employable”. The preparation and necessary training/exposure to venture outside their villages and into the town areas.

15.8.6 Participation, educational obstacles and truancy.
Given the population size and the distances from the existing schools, there is a need for community-based kindergartens and primary schools. However, to ensure success in the institution of kindergarten and primary schools at village level, these facilities must be accompanied by a system set in place right from the beginning. This system is important to ensure that all the parents are involved with the school setup and subscribe to the overall objectives of the education. The key elements of this system should be:

• Parents to be involved and provided information to generate interest in the children’s schooling progress;
• Each community to establish a school committee among the parents to oversee the school general activities and to be kept informed regarding progress in the school
• There should also be a Parent/Teacher Association;
• Teachers must be educators; motivated people, capable of motivating their pupils and students to learn.
• Rules and regulations regarding parents taking children out of school for outings such as during fruit season must be clearly spell out so that parents understand and act accordingly;
• Schools to be inspected and supervised by education authority on regular basis, however,
• Schools must be regarded as the social institution belonging to the village, and not imposed by the authority.
15.9 Conclusions for Penan Education

15.9.1 How the Penan regard education.
The Penan regard formal education as the key to their children future. They are fully aware that their old way of life is fast disappearing. The thick forest they knew is gone. They no longer have the right to claim the forest area and their surroundings as their source of livelihood. The community leaders understand this when they state, “We will all fade away if our younger generation are not educated until they are employable in the ‘new way’.”

15.9.2 Key challenges in Penan Education.
Academic education alone will not prepare the Penan adequately to live in the modern monetary economy. In order to prepare them reasonably well, the following aspects of education must be planned:

• The school curriculum, from kindergarten and primary to secondary levels, must be tailor made for their society. For instance, subjects like Agriculture Science, Husbandry, and Craft, including Woodwork, must be given more emphasis than the purely academic subjects, such as history and geography.

• There must be ample time for practical work in the study of the subjects mentioned in (i) above. The appropriate facilities, including sufficient land resources and enough teachers/instructors will have to be provided for.

• There must be a Training or Vocational School where those who have completed schooling, at whatever level, can go to go to sharpen their skills or pursue further development. This is essential so that they can be on par with others in the country. The aim is to prepare the Penan to be able to compete for employment anywhere.

• Those who have had formal schooling, now living in the villages must be trained as teachers. The priority is for the kindergarten and primary schools.

• The country teachers training university/colleges, like Batu Lintang, Maktab Perguruan Miri, Sibu and Rajang must be given special task in training of teachers required for the hinterland areas.

• Public education for the adult is necessary. Some may be absorbed as learner-trainer in the “training school” mentioned in number (iii) above.

• Exposure to more advance communities must be systematically and diplomatically done. The aim is to introduce the Penan to farming as a business to be able to move beyond subsistence farming.

• All the above need funding over time. Budget that will cover two five year planning periods are required to ensure that at least one group of children are taken through the complete schooling cycle. It is recommended that the authority have allocations for a 10-year period with annual budgets, plans and implementation schedules.

15.9.3 Importance of modern education to the Penan.
There is no looking back for the Penan as the old ways of living are not possible and they realize that their future is in the modern economy. They cannot go back to become hunters and gatherers, and expect to live as their fathers did. This is because the forest left is so much impoverished, and is not what it was, a decade or so ago. In addition the license holders or loggers impressed upon the Penan, they no longer can hunt and gather food freely. Change has come to them and in order to be able to manage that change and cope with the new way of live, they have to be educated. This need is understood by many of their leaders, elders, and the general public including the young people.
15.10 Recommendations for Education

Retaining Penan children in school.

Going to school for a child is a separation from their parents and family or home base. The child will be faced with an unfamiliar, formal and structured context with peers, a classroom setting, and facing the teacher/s and school authority. While it is a good learning experience for the children generally, it must be remembered that different children have different levels of tolerance for facing tension and varied capability to adapt to changes.

In dealing with students who have been separated from their families and their homes, there is a need to provide an educational environment that will encourage them to stay and to engage in learning. Some considerations for teachers and guardians include:

• Sensitivity to opportunities during the course of the day to give personalized attention to each student, especially the Penan kids who need to be the centre of attention (however flitting), so that they feel they “belong”
• Giving each responsibilities to make them feel they have role
• Acting as surrogate parents out side schooling hours, like week ends, like inviting them to your home doing little chores, to make them feel useful and belonging.
• Planned group activities, in the house, like barbeque, where the children participate fully, simple outing: like river bathing and encouraging them to swim and play games together, fishing etc.
• Organized games on the land, and delegation of responsibilities to organize whole game or part of the game.
• Calling the students by name, like what their parents call them.
• No labelling of any sort especially that which will result in negative feeling;
• No comment on racial characteristics;
• No public scolding on simple mis-behaviour in class.
• Rules: All rules for the school, for games and all activities must be clearly set, so that all will understand.
• All activities including the learning process in class, and games, must be structured with aims spelt out

Location of schools

One solution is to have schools nearer to their homes. This would reduce the element that can cause instability in the family. For Long Wat, there is already a strong element of school culture, started during the period from 1989 to 2006 when the Penan Volunteer Corp under Saran Joo, started literacy classes. One product of this literacy class, Sati Uleng, could also be recruited and trained as a kindergarten or primary level teacher. This would provide a much needed education service in the community as well as a employment.

There is an urgent need for kindergarten and lower primary schools (at least from primary one to four) in each of the Penan villages. An upper primary school, from primary five and six, with boarding facilities, may be located centrally, adjacent to a secondary school for the Penan in the Danum/Plieran/Seping area. There are several compelling reasons for having school facilities in the area:

• There are currently no school facilities in the area.
• To ensure social and economic justice for the region.
• To eradicate illiteracy and improve vocational trainability.
• To educate an employable work force
• To eradicate poverty.

Providing a meaningful system of education.
In order for the relocated Penan to advance the whole community must be educated. This is a huge task and a model for literacy and vocational training has to be created that will accommodate the Penan needs. There is a need to adapt other educational models that may be implemented quickly.

A meaningful education system for the Penan is one that which enable them to be self-reliant economically and able to adapt to their new environment. They should be able to interact with other communities on equal footing. The education system for them must be tailor-made and the training of the staff is urgently needed, to implement the education processes. It must be added this process is not only for the school going ages, but also for the all the adult groups, including women. The alternative will be the certain demise of that community.

In planning schools for the area, it is proposed that the children of school going ages be divided into two groups:

The first group to consist of the six to ten year olds (primary one to four). Schools for this age group should be within their community if not at their own villages. Attending a school closer their home would reduce the rate of dropout.

The second group is for those who are in primary five and six, and secondary school students. In term of age these would be those aged eleven and above. These would be able to be away from home, and go to boarding school. In the light of the total lack of school facility in the area, a central upper primary school and secondary school facility is proposed to be located in the community.

Without educational facilities in the area, a greater percentage will be illiterate in the years to come. Table 154 provides an illustration of the potential number of illiterate young people below twenty years old if school facilities are not provided for the community.

Table 154 Projected number of illiterate from the Danum - Plieran communities post 2009.

<table>
<thead>
<tr>
<th>Village name</th>
<th>Number Young people from 4 to 19 years</th>
<th>Number Should be Attending school</th>
<th>Number Actually in School in 2009</th>
<th>Number Potential illiterate/semi illiterate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Wat</td>
<td>56 Male, 64 Female</td>
<td>120</td>
<td>31</td>
<td>89</td>
</tr>
<tr>
<td>Long Malim (Penan)</td>
<td>48 Male, 37 Female</td>
<td>85</td>
<td>1</td>
<td>84</td>
</tr>
<tr>
<td>Long Malim (Kenyah)</td>
<td>45 Male, 37 Female</td>
<td>82</td>
<td>15</td>
<td>67</td>
</tr>
<tr>
<td>Long Tangu</td>
<td>27 Male, 29 Female</td>
<td>56</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>44 Male, 27 Female</td>
<td>71</td>
<td>0</td>
<td>71</td>
</tr>
<tr>
<td>Long Luar</td>
<td>45 Male, 46 Female</td>
<td>91</td>
<td>0</td>
<td>91</td>
</tr>
<tr>
<td>Long Singu</td>
<td>63 Male, 64 Female</td>
<td>127</td>
<td>1</td>
<td>126</td>
</tr>
<tr>
<td>Long Jek</td>
<td>36 Male, 30 Female</td>
<td>66</td>
<td>0</td>
<td>66</td>
</tr>
<tr>
<td>Long Peran</td>
<td>26 Male, 32 Female</td>
<td>58</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>390 Male, 366 Female</td>
<td>756</td>
<td>49</td>
<td>707</td>
</tr>
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</table>

A total of 707 illiterate or semi illiterate population added to the community is a huge step back into absolute disadvantage in the context of modern economy. In addition they would have no more or only little forest to depend on as an alternative source of food.
Finally, it would be a great service to the Penan in the area if a school were built for them at the locations most suitable and accessible to all the villages.
16 CONCLUSIONS

16.1 Penan contemporary existence and change

Murum Penan exist in a modern way of life not much different from that of other rural ethnic groups in Sarawak in that they are exposed to the vagaries of the cash economy and the need to have cash. Their traditional hunting and gathering system has almost given way to living by cultivating the land and earning a daily/monthly wages working for others. At present, the main employment available is from those who have come for economic gain in the surrounding environment once the almost exclusive domain of the Penan. Though there are vestiges of their traditional life style such as their values of sharing and cooperative living, the thrust of modernity demanded by the cash economy is beginning to make them more like other longhouse-dwelling communities.

The generally assumed traditional Penan lifestyle of isolated jungle nomads is no longer true for the Murum Penan and has not been for many years. They live in communities that have settled since the 1960s and in longhouses now accessed by a network of logging and estate roads. They are connected to the outside world by roads, radios, parabola TVs, mobile phones and interactions with other ethnic communities (and foreigners) who work in the logging and estate camps, factories and the Murum dam site.

While some of the Murum Penan send their children to schools, the numbers are still low due to the challenges (both physical and financial) of reaching the schools. In spite of these hardships, a number are educated and able to earning livings in the modern economy. Medical services are still a problem with the nearest clinic located at the Sungai Asap Township requiring considerable expenditures in both time and money to reach. The distance and the financial difficulties of reaching the closest service centre mean that school, clinics and other civil services are out of reach to the majority of the Murum Penan population.

As the access to the forest becomes more difficult for the Penan and they are increasingly unable to gather sufficient resources, they are coming to depend more on store-bought items to meet even their most basic needs. This presents two logical problems both involving distance and cost; the Penan either have to expend time and money to travel to the commercial outlets, thereby increasing the actual cost of anything they purchase; or the goods have to be transported to the interior, incurring increased costs that are passed onto the consumer. So while they now have access to commercial shopping centres such as Aloi junction and Sungai Asap, the costs of any goods they buy is much higher due to the extra spending on transport.

The Murum Penan are living in a rapidly changing environment that is forcing them into an equally rapid process of change and adaptation. They are faced with changes to their traditional lifestyle that is necessitating rapid adjustment to a range of socio-economic changes confronting them. There is generally recognition of the need to change and to the fact that their old lifestyle is no longer possible. However, they also recognise that their ability to adapt to the changes requires time and the forest resources as an “insurance policy” for the new economy. With this support, they can adapt to the new demands of modern living and the cash economy.

16.2 Aspects of Life that are important to the Penan

For the Murum Penan, food security is the most important aspect of life. In the past food was plentiful, readily accessible and extracted free from the forest. Now, they must expend considerably more energy and time for a diminished variety and abundance of this once plentiful food source. All items that they once relied on, and that were once a staple of the Penan diet - wild game, fish, sago, fruit, wild vegetables and much more - is now scarce. In this new situation of transition from...
their forest produce-based economy they are faced with a double hit. The forest is unable to supply them with the resources they require, they have to pay for whatever food that is available and they have few, if any sources of income. For a society that places such a high importance on food security, this is a precarious situation.

Another important aspect of their life highlighted by all interviewed is the community and the sharing that is implicit in this lifestyle. The sharing food and other items and assisting each other in times of need is important to them. A consistent request that has also been expressed during the survey is that they do not wish to live near to other non-Penan communities. They use the example of Sungai Asap resettlement as a case where the Belaga Penan community have been overwhelmed the other communities. Penan family life is close knit with the family unit a solid arrangement of parents caring for children and elders looked after by the family. One of the main reasons why many families from Long Wat have moved temporarily to Sungai Asap is to be close to their children who attend school.

The forest still plays an important role and an important aspect of Penan life is the proximity of the forest and the availability of the jungle products they depend on for their daily needs. The proximity to the forest is not only for the jungle products that are essential for their daily sustenance, but also to maintain their sense of wellbeing with the environment. Their desire to be close to the forest is also a request to not live in towns, a preference for the rural spaces, rather than more crowded urban spaces.

However, preference for the “good days” is conditional to one aspect of modern life that the Penan have admitted to be extremely important. This is the importance of incomes and money. They realise that they are entering the cash economy and it is here to stay, and that they now need to have money to survive. They also understand that their future lies in the education of their children (Figure 161).

Figure 161 Access to forest resources and sharing are important aspects of community life.

16.3 Challenges and hardships facing the Penan

The Murum Penan are a community at a crossroads of change. Their life as existed in the traditional form has changed and they are facing a future, for which their past has not prepared them. The uncertainty of their future and the changes in the
environment around them has bred distrust in a system that is supposed to look after their interests. As they gradually adjust to the cash economy, they find themselves sliding backwards as their dependency on non-forest goods increases. This frustration can be summarised in the comments from one of the informants, “Now it is difficult to find wild game and fish, much of the forest has been destroyed, the animals are gone and the water coming from the estates pollutes and poisons the rivers. The changes that are happening cause a lot of problems; and even though we now have money it is not enough to maintain our livelihood”.

The Penan were formerly able to adapt to their environment and their present biggest challenge to survival is how to adapt to the changes that are before them. While they are adaptable, the conditions and experiences of the Penan’s traditional way of life have not equipped them to live a sedentary and cash economy-driven livelihood. The need to transact money for their food, which in the past was a matter of hunting and gathering in the forest, is an on-going hardship to them.

They also realise there are challenges of modern living that require them to abide by rules and laws that have until recently existing outside their communities. They are not adverse to this, but their isolation from the basic civil services makes it difficult to compete on an even footing. As one example, employment in a plywood factory as a permanent worker earning higher wages than a casual worker is not possible for many because they do not have identity cards. Being unfamiliar with the cash economy means that they often feel cheated when they purchase things from the timber camps. Since they cannot read there is often the feeling that the storekeeper has cheated them.

One of the main hardships faced by all is with respect to hunting and foraging for food from the forest. Because the forest near to their longhouses is depleted, finding products such as rattan and wild palm means having to travel far before reaching the suitable forest. Wild game and river fish are difficult to find. The rivers are depleted because of pollution and the lack of food from the fruit-bearing trees that have been logged.

Although they expressed their disappointments over the lost of trees and jungles because of the timber industry, one informant said at least the loggers left a few trees standing. These trees included wild palm, rattan, and non-commercial species of trees, which can be utilized for minor construction. On the other hand, they are dismayed by the palm oil estate system of cultivation that clears the land and destroys most trees and plants.

Ironically, in spite of their hardships created by the timber and oil palm estates, the impending closure of camps and palm oil estates due to the construction of the Murum dam will result in further challenges to Penan life. This will result in the loss of income (in the form of allowances and some employment) and livelihood support (in the form of free transport and assistance with fuel and other welfare needs, such as medicine). They will also lose a place to market their crafts and jungle products to the workers in the base camps.

16.4 Cash and modern life

Money is increasingly important for the Penan as a means of exchange for food. Also for critical times when someone in the family falls sick, they will need money for medical attention. Generally, they feel that in the past money was more easily available because they could get money by selling jungle products such as wild game, fruit, fish and Gahuru wood, which was formally in abundance. By selling these products, they could easily get the money they needed to buy items. Furthermore, in the past they did not need to use the cash earned from the sales of the forest products to buy food. However, now since the forests have gone and game is depleted they have to work – something, which has not been part of their traditional life - in order to get money to buy their food.
In the past, central to the Penan value system was sharing and exchange of items such as food and household items. The expression of this in the present means sharing money as well as sharing other goods. Even though the Tuah Kampong receives money from the logging camps, he shares with the rest of the longhouse, especially those who are in need and who have no means of any income.

The timber and plantation developments in the Murum area have brought with them a network of roads, employment opportunities in logging camps, multi-media exposure and the possibility of easier transportation for the Penan to visit areas outside the confines of their traditional world. These material changes have also had an influence on the community mindset as they experience the needs of the modern world. The traditional value of sharing is threatened by the individual needs of personal ownership. There are those who prefer to live away from the longhouse system – where living under-one roof means the need to share whatever with the whole residents in the longhouse. An example is a household in Long Menapa who has family members who are well-paid workers earning substantial wages. According to them when they purchase their monthly food supply, they would return to the house at night when the rest of the longhouse were asleep so that they would not need to share the food with the others who were not their immediate family members.

To some it would be preferable to live in separate blocks of apartments with close relatives so that should they have to share anything they would only share among their immediate family members who live in the same block of apartments. With modernity the Penan realise the importance of having money, as it is now a matter of survival. In the past they did not have money but they still could survive, as it was possible to live off the land. Now, expectations have risen and money is needed not just to buy food but also to approach the lifestyles of the other groups.

**16.5 Adapting to change**

The Penan survival to the present is a story of adaptation to change. Thus, the Murum Penan are able and willing to accept change, especially among the younger generation, who are quick to pick up new ways and lifestyle. With education and the increasing number of educated youth, they will be the vanguard for change. The Penan are renown as crafts people and talented in tool making. These skills have been extended to the repair of outboard motors and making crafts such as tools and parangs. An example of innovation and adaptation is a young man at Long Wat who fashioned an automatic tattoo drill by converting a battery-operated tape-recorder into a battery-operated drill that runs the needle to make tattoo designs.

The Penan realise that they must adapt and they are able and keen to learn. A demonstration of the desire to learn and adaptability comes from Long Malim. One man there has never attended school, yet he was able to learn to read and write by self-learning and informal teaching from friends. The Penan recognised the value of education and are determined to send their children to school. Their aspiration to see their children succeed in school is a clear indication of their adaptability to change. One informant summed up their desire, “We realise that we Penan are far behind other people. Therefore we need to have our children educated.” (Figure 162)
16.6 Collective Cooperation.

While they continue to live in a longhouse setting of their own community, it is highly likely that the Penan will continue to be disposed to collective cooperation. They have expressed the opinion that living in a longhouse would ensure that assistance from others within the community would be forthcoming should they have any problems. Longhouse living is an extension of their traditional value of helping each other through support and sharing food and labour. The system of longhouse committee (JKKK) perpetuates the cooperative spirit of working together for the common good. This working together includes projects such as the monthly cleaning the longhouse compound and working together to do repair works in the longhouse. These and other aspects of life, such as farming would always call for *gotong royong* – or, collective volunteerism. Collective cooperation is most evident in the system of labour exchange during rice farming means sharing work during planting, weeding, and harvesting. They also cooperate during festivities such as at Christmas worship and during celebrations where relatives congregate in a selected longhouse.

The Plieran communities are closely knit as the communities of Long Luar, Long Tangau, Long Singu and Long Menapa all originated from Long Luar. Over the years, as the population grew, the communities have fissioned and created new independent communities. They often visit each and cooperate during the annual ritual gathering at the site of Batu Burak – near the proposed dam site. The Penan of the Danum River; the communities of Long Wat and Long Malim are closer to each other and exchange visits and stay in each others’ longhouse for extended periods of time. These two communities are related; with Long Malim having formed as the Long Wat population grew.

16.7 Population Predictions; Stability And Migration.

One of the concerns expressed was that of the number of non-Penan marrying Penan women. This could cause instability in the population as the women followed the non-Penan and migrate out with their families to the husband’s home towns/longhouses. With the diminishing forest resources, education and opportunities for jobs outside the Murum area will ‘pull’ the younger people to leave the community leaving a population of old people. This trend could be stemmed provided jobs are
made available in the resettlement townships to enable the young people to be employed.

The impending resettlement of the communities and the opportunities provided by projects in the area due to the construction of the Murum dam may cause a certain amount of instability to the population. Those able to work will be from the community able to work will be attracted to the jobs offered and will be influenced by the contacts with outside people. This may cause disparities in the communities with respect to wealth and influence and the result may be an erosion of the basic social and cultural fabric of the communities.

16.8 Resettlement Considerations

Until the communities are fully informed with respect to what they can expect from resettlement, it is unreasonable to expect Long Wat or any other community to develop a consensus. Choosing where to move is extremely difficult, simply because they do not have all the information with regards to the conditions of the move, in order to make an informed choice. This point was underscored at the 1st December dialogue in Long Wat. Some of the important issues that need to be considered include:

- Knowing exactly the extent of the flooded zone
- Having access to suitable land.
- Knowing the long-term movement of the timber companies and plantations and
- Knowing what areas can be made available for Penan resettlement sites.

The Penan communities have made it clear that they do not want to be grouped together in a single resettlement site and have repeated this request for multiple locations. The Penan concerns on this issue have been alleviated by assurances from the authorities that they will get to choose their resettlement locations and that their perspectives and options will be solicited and rigorously examined from all angles. However, given the recent history of resettlement for other communities, they understandably retain some scepticism about the final outcome.

The area around Sungai Tegulang has been indicated as a likely 2nd choice site for the people of Long Wat. All Western Penan groups probably moved through the area at some point: “from the latter part of the 19th century the progenitors of the Penan Geng, the Penan Apat, moved from the middle Plieran and Seping watersheds, to the Tegulang and Keluan, and from there back to the Plieran” (Brosius 1992). While it is indeed ancestral ground for all the dam-affected communities today, only Long Wat has thus far claimed it as part of their territory or expressed a desire to return there.

Within the community there are some contradictory opinions about the suitability of the Tegulang site. Those who favour it say that the forest is still in good condition and that good agricultural land is available. Also, it is just over the mountains from the Batu Tungun area. However, within current lifetimes not everybody in Long Wat has personal experience or family memories of Tegulang. Remarkably, some people in Long Wat have lived along the Danum and Plieran Rivers all their lives. They have certainly travelled out of the area temporarily, but the Danum is the place they know best. For the moment they seem content to follow community consensus. However if the resettlement process is not well planned, this group of people may experience severe adjustment problems by not being able to make a new start in Tegulang, and not being able to return to the Danum either.

The main administrative problem, as mentioned above, is the presence of the Kenyah Badeng in Tegulang today and their overlapping claims to the area. The Pengulu, Pao Tului, has been monitoring developments in the Tegulang area and is of the opinion that Badeng haven’t been clearing forests (for their fields) in the areas selected, and that they have a form of agreement with the Badeng leaders about this.
For the Plieran communities, they have maintained the position they took when first asked in 1993 and would still prefer moving to the area around the Metalun river (further up river along the Plieran river). This area is familiar to them and has suitable agriculture capability to support the four communities that would move there. The communities have made it clear that while they are in agreement to move to the same area, they wish to have separation between their communities. A major concern for all the communities is having access to the forest resources nearby.

The communities of Long Jek and Long Peran will not be affected by the HEP project and as such do not wish to move. They have, however, expressed their interest in being able to benefit from the types of agriculture, health and education programmes that will be planned with the resettlement exercise.
17 REFERENCES & APPENDICES


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Appendix One: Claimants from Long Menapa, Long Jek and Long Peran
Appendix Two: Claimants from Long Malim, Long Tangau, Long Singu and Long Luar
Appendix Three: Claimants from Long Wat
Appendix Four: Community layout and long house sketches
Appendix Five: Visits between longhouses and other places.
Appendix Six: Wage earners and wages
Appendix Seven: Detailed household transaction record.
Appendix Eight: Summary of monthly household expenditures