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Conservation and Tourism: A Case Study of Longhouse Communities in and adjacent to Batang Ai National Park, Sarawak, Malaysia.

A thesis submitted in partial fulfilment of the requirements for the Degree of Master of Parks, Recreation, and Tourism Management At Lincoln University

By O.B. Tisen

Lincoln University
2004
ABSTRACT

Abstract of a thesis submitted in partial fulfilment of the requirements for the Degree of M.P.R. & T.M.

Conservation and Tourism: A Case Study of Longhouses Communities in and adjacent to Batang Ai National Park, Sarawak, Malaysia.

By O.B. Tisen

The purpose of this study is to investigate benefits of tourism to local communities and conservation in Batang Ai, Sarawak, Malaysia. The main focus of this study is on the environmental sustainability of Batang Ai National Park, which is dependent on the sustainable extraction of natural resources by local communities with privileges to hunt, fish and gather forest produce from the park. There are seven longhouses in and adjacent to Batang Ai National Park with a total of 592 people having privileges within the park.

Research on the use of tropical forests shows that one person per square kilometre is sustainable if people are obtaining all their protein requirements from the forest. Batang Ai National Park, with a total area of 240 square kilometres, is clearly not sustainable if all the protein requirements of the people with privileges are derived from the park.

Tourism is seen as a non-consumptive method of providing benefits to the local communities, which is hoped to reduce their dependence on the natural resources of the park.

A combination of both qualitative and quantitative data collection methods was used for the study. These methods include questionnaire surveys, community group interviews and key informants interviews. Questionnaire surveys were conducted on people with gazetted rights and privileges within the park, including those who were residing in longhouses in resettlement schemes three to four hours travel from the park. Community ‘group interviews’ were conducted in eleven longhouses and sixteen in-depth interviews...
with key informants from government agencies, non-government organisations, private sector, and local organisations were also conducted.

Results indicate that local communities believe that tourism can benefit them and they believe that it is important to protect the environment, forest and wildlife in order to attract tourists. However, lack of opportunity for earning cash means that their well-being depends on the continued use of natural resources from the forest. Results also indicate that local communities can benefit from tourism and that tourism can benefit conservation, however, the benefits are dependent on the volume and distribution of tourists. During the survey, only the Rh. Ngumbang community receives regular tourists and correspondingly has a higher income, while other communities rarely had tourists and received little or no benefits from tourism. Overall, tourism in Ulu Batang Ai has few or no effects on the local communities’ traditional way of life, and their well being still depends on farming, hunting, fishing and gathering forest produce. For Batang Ai National Park to achieve its conservation goals, it is crucial that the forest areas next to the longhouses in Ulu Batang Ai be able to continue to provide the longhouse communities with their requirements of forest produce. Failing this their well-being will be compromised or they might obtain these requirements from the park thus, compromising the conservation values of the national park.

Keywords:

Malaysia; Sarawak; Batang Ai National Park; Local communities; Tourism; Conservation; Traditional use of natural resources; Benefits
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CHAPTER ONE
INTRODUCTION

1.0 GENERAL INTRODUCTION

The purpose of this thesis is to investigate the role of tourism in reducing pressure on the natural resources of Batang Ai National Park. The conservation values of Batang Ai National Park are dependent on the sustainable extraction of natural resources by local communities with privileges over the park. There are seven longhouses\(^1\) with a total of 448 people holding privileges to hunt, fish and collect natural resources from the park which has a total area of 240 square kilometres (Ahmad et al., 1999). Research on the use of tropical forest shows that one person per square kilometre is considered sustainable if he/she depends solely on wild meat for his/her protein needs (Robinson and Bennett, 2000). Thus, the number of people with privileges over Batang Ai National Park is clearly not sustainable if they obtain all their protein from wild meat from the park (Ahmad et al., 1999).

For some longhouses in Batang Ai, the Agricultural Department has initiated fish farming projects. It was hoped that the fish would provide a source of protein and income as a substitute for wild meat, however the women tend the fishponds and sell all the fish for cash while the men continue to hunt (Bennett et al., 2000). Tourists have been visiting the Batang Ai area for many years but their role in reducing dependence on forest resources has not been clear. In one particular study, a longhouse with revenue brought about by tourism “... has significantly more non-wild protein in the diet than its nearby non-tourist longhouse .... [but which] was eaten in addition to, not instead of, the wild protein” (Nyaoi and Bennett, 2002; p. 5). Conversely, tourism is believed to be effective at reducing hunting because it occupies the men’s time (Horowitz, 1998).

\(^1\) When discussing longhouses, the terms ‘residents’ and ‘communities’ and sometimes ‘households’ are all used to describe the ‘longhouse people’.
Economic benefits from tourism was seen as a way to reduce the level of dependence of local communities on natural resources from the park, however, studies also show that an increase in income from tourism does not necessarily reduce their dependencies on natural resources (Nyaoi and Bennett, 2002).

A number of studies on tourism and Iban communities show that tourism generally provides only part-time employment for local communities (Sagging et al., 2000; Yea and Noweg, 2000; Zeppel, 1996) and that “men tended to be involved in tourism-related work much more extensively, while the women remained primarily agricultural workers” (Yea and Noweg, 2000; p.11). Yea and Noweg (2000) pointed out that “...during the high tourism season, the women normally had to spend more time in agricultural work to compensate for the lower availability of men to work on the farm” (p.8).

Studies also show that tourism benefited different people differently (e.g. Keller, 1987; Milne, 1987; Sagging et al., 2000; Yea and Noweg, 2000). Among longhouses communities in Sarawak, tourism represents a substantial source of income but “…even though most women do not benefit from tourism to the same extent as the men, or the community in general, they cannot refuse to participate in tourism, since the loss of tourism-related income would negatively affect the entire longhouse” (Yea and Noweg, 2000; p. 11).

Zeppel (1996) observed that the level of Iban involvement in tourism ranges from the community acting as a service supplier in partnership with outside tour companies, to community control of tourism and guesthouse facilities. This “…illustrates the changing role of Iban hosts from ‘culture providers’ to ‘culture managers’; from entertainers to entrepreneurs” (Zeppel, 1996; p.373). There is a need for more research into these changing roles in longhouse tourism; how the benefits from tourism are distributed among the communities, and what significant changes does tourism bring to the local communities, particularly with respect to time spent in their traditional ways of life of farming2, gathering and hunting in Batang Ai National Park.

2 Farming in this context mean planting, tending and harvesting rice.
1.1 RESEARCH GOAL AND OBJECTIVES

The main goals of the research are to determine how local communities in and adjacent to Batang Ai National Park perceive conservation and tourism in the area, and if tourism in the area benefits local communities and conservation. The objectives of this research are:

1. To describe the historical situation and development (changing economy) of Ulu\(^3\) Batang Ai within a broad Sarawakian context.

2. To assess the beliefs of local residents about longhouse tourism, their perceptions of tourism impacts, and attitudes toward tourism.

3. To determine local residents' views of tourism as a source of income and alternative to traditional collecting and harvesting of natural resources.

4. To determine actual income and its distribution and the implications of this for traditional use of natural resources.

5. To determine the amount of time local residents spent in tourism related activities and the benefits derived from tourism, compared with time spent and benefits from traditional activities of collecting and harvesting natural resources.

1.2 THESIS ORGANISATION

This thesis includes seven chapters. Chapter two presents a review of literature on local communities and their use of natural resources. It provides the reader with an understanding of how the changes in roles and attitudes of local communities affect sustainability of natural resources. Hunting of wildlife in a tropical forest is used to illustrate sustainability of use of natural resources. Chapter two also provides an outline of conservation and factors influencing decisions on the establishment of protected areas. The chapter also informs readers on initiatives that the Sarawak government has

\(^{3}\) Ulu : Upriver
undertaken to enhance conservation, the rights and privileges of local people in protected areas, and participation of local people in the management of protected areas in Sarawak.

Chapter three discusses tourism and local communities within the context of developing countries. It provides a brief overview of local communities' responses to tourism, impacts of tourism, factors which influence local economics, and sustainability of tourism destinations. The chapter also discusses tourism in Malaysia, with emphasis on the involvement of Iban communities in tourism in Sarawak.

Chapter four introduces the research site, Batang Ai National Park in Sarawak, Malaysia. It includes a brief overview of Sarawak followed by information on the Betong Division and Lubok Antu District. The chapter also provides information on the historical background of Batang Ai, how government decisions influence socio-economic conditions and how the local people respond to these decisions. The response of local people to the establishment of Batang Ai National Park, and the development of tourism and its potential in the Batang Ai region are also discussed.

Chapter five justifies and describes the methodological approach used to provide answers to the research questions outlined above. The chapter describes the qualitative and quantitative data collection methods used, including individual surveys, group interviews and key informant interviews. It also outlines the limitations of the study.

Chapter six presents and discusses the results from the study and related discussion. The socio-economic status of the local communities is first analysed, followed by the time spent in their traditional ways of life of farming, gathering and hunting, and their perceptions of various attributes of tourism and conservation. Chapter seven summarises and concludes the thesis. The chapter also reviews future research opportunities.
CHAPTER TWO
LOCAL COMMUNITIES AND CONSERVATION

2.0 INTRODUCTION

This chapter reviews selected research on local communities and conservation. It introduces the traditional Dayak communities in Sarawak with emphasis on their culture, land use, hunting and gathering. The chapter then discusses hunting and wildlife emphasising the importance of wildlife to tropical forest people, wildlife biomass in tropical forests, carrying capacity of tropical forests, impacts of hunting on wildlife and factors affecting sustainability. Case studies are used to illustrate the concepts presented. The chapter also gives an overview of conservation, referring to genetic diversity, species diversity, ecosystems and landscapes, edge effects and shape of protected areas as factors influencing conservation decisions. It then discusses how local communities perceive conservation and their attitudes towards protected areas and how the establishment of protected areas affects them.

Finally, the chapter outlines conservation efforts in Sarawak stressing the state’s conservation strategy and rationale for the strategy, and the establishment of its protected area system. It then discusses initiatives by Sarawak government to conserve wildlife, yet retain rights and privileges of local people in protected areas and the participation of local people in the management of protected areas. Issues relevant to the research in Batang Ai will be highlighted.

2.1 LOCAL COMMUNITIES

A community is a combination of social units and systems that afford people daily access to those broad areas of activity which are necessary in day-to-day living. They have major functions: economic (i.e. production, distribution and consumption), socialisation, social control, social participation and mutual support. Communities are usually defined on the basis of three major attributes: a
geographical area or territory, social interaction reflecting interdependencies among social units, and common norms that are a set of shared behavioural expectations which community members help to define and, in turn, are expected to follow (Wall, 2000; p. 92).

In an isolated village, all the above characteristics of a community may have existed. In a complex modern society however, where there is great mobility, there may not be such closeness in the relationships within the community (Wall, 2000). In Sarawak, rural communities such as Ulu Batang Ai, the research site, exist within a geographical area which shares common norms and exhibits interdependencies among social units.

2.1.1 Local communities in Sarawak

The people of Sarawak may be divided into two major groups, the Bumiputra or indigenous people and the non-Bumiputra or non-indigenous. The Chinese constitute the majority of the non-Bumiputra, followed by Indonesians, Indians and other races. The indigenous people of Sarawak can be classified into two broad groups; those who live in the coastal areas comprising of the Malays and Melanau, and those in the interior or Dayak (Hong, 1987). The Dayak is a collective term that refers to ethnic groups inhabiting the Island of Borneo including Iban, Bidayuh, Bukitan, Bisayah, Dusun, Kelabit, Kayan, Kenyah, Sabup, Sipeng, Kajang, Sekapan, Kejaman, Lahanan, Punan, Tanjong, Kanowit, Lugat, Lisum, Murut, Penan, Sian, Tagal, Tabun and Ukit. The Iban are the largest group of the Dayak in Sarawak (Hong, 1987).

Until recently, most of the Dayak lived in the interior areas, often inaccessible except by boat or on foot. They are mainly shifting cultivators, living off the land and forest. For all Dayaks of Sarawak, “the land, the waters, and the forests have provided them their livelihood and daily needs ever since they can remember” (Hong, 1987; p.3).

2.1.2 Traditional Dayak Society

Most traditional Dayak societies had three main features. These were longhouse social organisation, customary land tenure and shifting cultivation (Hong, 1987). The family
was the basic social and economic unit, with each family occupying an apartment within
a longhouse. A row of apartments formed a longhouse which is the centre of the social
organisation (Hong, 1987). Except for the Kayan, Kenyah and Kelabit who maintained a
ranked social order of aristocrats, commoners and slaves, the Dayaks were basically
classless with a complex system underlying the principles of reciprocity and cooperation
among the families. Each family had rights over their own plots of land, allocated tasks
and controlled labour among family members, obtained the fruits of their labour, and
exercised rights over its own living conditions within the longhouse room (Hong, 1987).

An unwritten suite of customary beliefs and values known as ‘adat’ guided behaviour in
traditional Dayak society. The “adat was the unwritten body of rules and principles
which was extended to all things and all relationships in both [the] physical and
supernatural world[,].... include[ing] the living and the dead, the evil and the good,
sacred and profane” (Hong, 1987; p.12). In the adat, it was believed that everything had a
soul or life of its own and it is important to conduct oneself in a proper way in order to
maintain the balance and harmony of all elements (Hong, 1987). Each longhouse has a
council of elders of individuals who were well versed in adat and its rituals, and
individuals with outstanding qualities like bravery, wisdom or oratory. The council of
elders decided on all matters that affected the members of the community as well as
performing the role of judge and mediators for settling disputes and imposing sanctions
on members (Hong, 1987).

To the Dayaks, land provides them with their basic needs and held deep significance in
their spiritual life. Under the adat, the person who cleared the forest had the “rights to the
use and disposal of the land[, which] belong jointly to the family of the original feller”
(Hong, 1987; p. 14). The right of ownership is reverted to the community if the family
abandons the longhouse or when there is no mark of ownership shown. This “enabled
each family and community to gain access to the abundant forests, land and water, as
well as providing for cleared but unused land (or old forest) to be the property of the
community” (Hong, 1987; p. 14). Members of the community also have the rights over
the forest surrounding their longhouse.
In traditional Dayak society, shifting cultivation was the most important economic activity which determined the allocation of tasks, and time for major rituals and spiritual beliefs (Hong, 1987). A shifting cultivation cycle involved felling the forest, firing the dead vegetation, sowing or planting, weeding and harvesting. Rice was the main crop planted by using simple tools. After the plot of land was cultivated for a period, the farmer moved to another leaving it to grow back for at least twenty years to regain its fertility (Sidu, 2000b). This process was repeated until the original plot had recovered its fertility and the farmer returned to cultivate it, starting the cycle all over again (Hong, 1987). In recent times, however, land shortage in some areas has caused the fallow period to be shortened to as little as five years (Sidu, 2000b; p. 169).

The traditional Dayak society also engaged in other economic activities such as hunting, fishing, gathering forest produces, and rearing of pigs and poultry to supplement their daily needs. All family members have their own roles; the men hunt and fish, and fall and burn forest for farmland. The women were responsible for sowing and weeding crops and gathering jungle produce, and both men and women were responsible for harvesting (Hong, 1987). Fishing, hunting and gathering of jungle produce were important supplementary activities contributing substantially to the family’s daily food requirements. The main jungle products collected were mushrooms, bamboo shoots and fern which comprised the major vegetable component of their diet. Wild meat or fish was often shared with other families in the longhouse, which served “... as a kind of ‘insurance policy’ for an individual in lean times as one can always expect a share of meat and fish from one’s neighbour” (Hong, 1987; p. 29).

Traditionally, wildlife represented a valuable resource being a major source of protein since people “… breed no animals, except for pig and fowl, for the table” (Hose, 1926 in Cleary and Eaton, 1992). Wild pig and deer were hunted with dogs and spears or traps and snares, and small animals were shot with blowpipes (Cleary and Eaton, 1992). Freeman (1955 in Hong 1987) observed that hunting and fishing among the Iban might be extended beyond their longhouse territory into territories of neighbouring communities which is allowed under Iban adat.
2.1.3 Rural Dayak’s society today

Today, most rural Dayak’s communities still practice shifting cultivation and continue to depend on resources from surrounding forests to supplement their food and income (Sidu, 2000a). They are mainly subsistence farmers, planting hill rice and some cash crops such as rubber, pepper, cocoa and fruit trees to supplement their family income (Sidu, 2000a). The level of education and monthly income of rural communities are relatively low compared with urban areas. For example, Sidu (2000b) recorded that only 52 per cent of the population of people living at the periphery of Lanjak-Entimau Wildlife Sanctuary had some schooling. The monthly income of heads of households was RM 92 per month which is well below the State Poverty Line income level of RM 495 per month (Sidu, 2000b).

Hunting, fishing and gathering wild vegetables for subsistence are important activities among rural Dayak communities (Sidu, 2000b). In Ulu Batang Ai and in areas adjacent to Lanjak-Entimau Wildlife Sanctuary, wild boar is the most popular animal hunted (Lading and Tisen, 2000; Sidu, 2000b). Other animals hunted include sambar deer, barking deer, mouse deer, porcupine, and other small animals. Fishing is mainly done with cast-nets, gillnets and spear guns. Among communities adjacent to Lanjak-Entimau Wildlife Sanctuary, the most common fish caught were *semah*, *tengadak*, *baung*, *bantak* and *kulong* (Sidu, 2000b). Wild vegetables gathered include *daun sabong*, *kepayang*, ferns (*paku* and *miding*) and edible mushrooms (*kulat*) (Sidu, 2000b). Among the Dayak communities in Ulu Baram, Miri, “the dependency on wild resources for food is high with wild meat constituting 83% of all meat side dishes and wild vegetables constituting 40% of all vegetable side dishes” (Christensen, 2000; p. 367).

In summary, the rural Dayak communities “... would continue to be dependent on the available resources, particularly, the surrounding forest to supplement their food and income, as well as to meet their other basic needs” (Sidu, 2000a; p. 193).
2.2 HUNTING AND SUSTAINABILITY OF WILDLIFE

Archaeological records show that the relationship between humans and wild food sources span at least 40 millennia (Cranbrook, 2000) and “throughout history, indigenous peoples have undoubtedly depended on wild meat and fish to meet their animal protein requirements” (Robinson and Bennett, 2000; p. 15). In the tropical forest, the long-term presence of humans and their dependence on wildlife indicated that wildlife must have been able to sustain hunting by humans (Robinson and Bennett, 2000). Today, wildlife remains an important source of protein for people in the tropical forests and its use remains ubiquitous (Chin and Bennett, 2000; Robinson and Bennett 2000). Wildlife is an integral part of the people’s culture and animal parts are used in traditional ceremonies and dances (Caldecott, 1988; Wildlife Conservation Society and Sarawak Forest Department [WCS & FD], 1996; Chin and Bennett, 2000; Robinson and Bennett, 2000). Often, hunting is a symbol of achievement of manhood with tropical forest people (Chin and Bennett, 2000; Bennett et al., 2000; Robinson and Bennett, 2000). However, hunting of many species in the tropics is no longer considered sustainable (Robinson and Bennett 2000).

2.2.1 Importance of wildlife to tropical forest people

Wildlife is an essential source of protein for tropical forest people. In Bolivia, ten indigenous groups consume an average of 59.6 g of protein per person per day from wild meat, well above the 20 g minimum daily protein intake required for healthy subsistence (Townsend 2000). Replacing wild meat with beef would cost $US 871 per family per year, or more than 60 per cent of the annual average income of Bolivians’ wage earners (Townsend, 2000). In Sarawak, Bennett et al. (2000) estimated that 29 per cent of all meals in the interior contain wild meat, and this rises to 67 per cent in remote parts of the interior. Subsistence hunters in Sarawak consume more than 23,000 tonnes of wild meat per year, and it would cost about $US 75 million to replace this with domestic meat (WCS and FD 1996; Bennett et al. 2000; Bennett, 2002).
Wildlife is also hunted for economic gain and income from the sale of wildlife is a significant part of the economy of rural communities in tropical forests (Robinson and Bennett 2000; Bennett et al., 2000; FitzGibbon et al. 2000; Noss 2000). In Kenya, regular hunters sell wild meat at a price of $US 0.25 per kilogram, earning $US 275 per year, a large sum considering the average local per capita income of people living around the forest is $US 38 per year (FitzGibbon et al. 2000). In the Central African Republic where the weekly wage is $US 2-13, snare hunters earn $US 9.50 per week, which corresponds to an average annual income of $US 494 (Noss 2000).

Chin and Bennett suggest that there is no clear distinction between hunting for commercial gain or subsistence among forest-dwelling people, “with patterns ranging from an additional animal hunted for sale on rare occasions when the hunter goes to town, to frequent hunting to supply a regular trader, to full scale professional hunting” (Chin and Bennett, 2000; p. 30). Cash from sale of wildlife is used for buying essential and desired commodities, and also for buying equipment to improve the efficiency of hunting (Chin and Bennett, 2000).

Wildlife is fundamental to the cultures of the people in tropical forests and wildlife artefacts are worn as personal adornment especially in ceremonies (Cleary and Eaton, 1992; Bennett, 2000). In Sarawak, the hornbill is an example of great cultural significance for many ethnic groups, its habits are imitated in dances and its elaborately carved effigy is of “... paramount importance in the principal Iban festival, the Gawai Kenyalang” (Bennett, et al., 1996; p. 123). The Iban and Orang Ulu used the feathers of hornbills on headdresses of both men and women and Orang Ulu women use a brace of the feathers on each hand for their traditional dancing (Bennett, et al., 1996). Wildlife also plays important roles in indigenous religion, mythology, and ceremonies (Cleary and Eaton, 1992). Loss of wildlife is often followed by decreases in consumption of animal protein among rural communities, which undermine their wellbeing (Robinson and Bennett, 2000).
2.2.2 Wildlife biomass (production) in tropical forest

Ungulates in tropical forest are generally smaller and fewer in number per square kilometre than those in open grassland because of scarcity of food (Robinson and Bennett, 2000). The overall standing biomass of mammals per square kilometre of evergreen forest rarely exceeds 3,000 kilograms compared with 15,000 kilograms in a mosaic of forest and grassland and exceeding 20,000 kilograms in open grassland (Robinson and Bennett, 2000). The lower overall biomass of mammals in tropical forest affects the amount of meat produced, and the maximum number of animals that can be secured by hunters (Robinson and Bennett, 2000). For most tropical forests to have sustainable animal populations, Robinson and Bennett (2000) suggest that the harvest of game meat must be less than 200 kilograms per square kilometre per year. In neotropical forests, harvest of 152 kilograms of wild meat per square kilometre per year is considered to be sustainable (Robinson and Bennett, 2000).

2.2.3 Carrying capacity of tropical forest

The carrying capacity of tropical forest in relation to human use refers to “... the maximum number of people depending on meat from wild species who can live in a forest while still conserving adequate populations of these species” (Robinson and Bennett, 2000; p. 23). If people depend solely on wild meat for their protein requirements, dividing the maximum sustainable production of wild meat in tropical forests by human per capita animal protein needs give an estimate of the carrying capacity of the forests (Robinson and Bennett, 2000). Robinson and Bennett (2000) suggest that 65 per cent of live animal is edible meat thus a square kilometre of tropical forest (150 kilogram per square kilometre) will produce 97 kilograms of edible meat per year. The recommended daily amount of meat intake per person per day is 0.25 kilograms which is equivalent to 91 kilograms per year. Thus for tropical forest to be sustainable for people depending exclusively on wild meat, the carrying capacity is one person per square kilometre (Robinson and Bennett, 2000).

Christensen (2000; p. 359) recorded among the Kelabit in Ulu Baram, Sarawak, that “dishes made from wild vegetables and wild meat represents more than half of the total
amount of side dishes” eaten. The ‘meat side dishes’ includes wild meat such as wild boar meat which is the most frequently eaten, fish, snails, larvae, tadpoles, crab; domesticated meat such as chicken, ducks and fish; and occasionally meat purchased from town such as tinned pork and fish (Christensen, 2000). People often do not depend solely on wild meat for all their protein requirements, but also on other wild species such as fish and crab, and domesticated meat. Thus, in reality the carrying capacity of one person per square kilometre may be an underestimate of sustainability for tropical forest. However, for the purpose of this thesis, the figure will be used to indicate sustainability of Batang Ai National Park, the forest area under study.

2.2.4 Impacts of hunting on wildlife

Hunting has resulted in global reduction of game animals such as ungulates as well as a wide range of species ranging from primates to small birds (Bennett and Robinson, 2000a; 2000b). In neotropical forest Redford (1992) records a reduction of 70 per cent in mammal populations under moderate levels of hunting and under heavy hunting it can be reduced by more than 95 per cent. In Africa, subsistence hunting reduces duiker populations by about forty-three per cent (Hart 2000). In Sarawak, all diurnal primates were locally extirpated in three out of four heavily hunted sites surveyed, and barking deer in two of them (Bennett et al. 2000).

Bennett and Robinson (2000b; p. 500 paraphrased) summarised the impacts of hunting on wildlife as:

- Lowers population densities of hunted species.
- Reduction in average body size of hunted species.
- Lower average age of first reproduction in a population.
- Possible increase in average female fecundity.
- Reduction in the proportion of animals in older age classes.
- Decreases in future production of hunted populations.
- Certain vulnerable species become locally extirpated.
- Decreases in representation of larger-bodied species resulting in changes in size structure of the biological community.
• Changes in the composition of the biological community.
• A significant decrease in the production of the biological community.

2.2.5 Factors affecting sustainability of hunting

Sustainability is “the ability to maintain something undiminished over some period of time” (Lele and Norgaard 1996 in Bennett and Robinson, 2000b; p. 501). Spellerberg (1998; p.1) suggests that “… sustainability means many things to many people; there are social, economic, cultural, ecological and political perspectives …. but underlying and indeed fundamental to all of this, is the sustainability of biological diversity”. However, biodiversity is declining in many forest areas and hunting of many species in tropical forest is no longer sustainable (Bennett and Robinson, 2000b). Bennett and Robinson (2000b; pp.505 – pp.509 paraphrased) identified the following factors responsible for the lack of sustainability of hunting.

• Physical factors
Increased accessibility to hunted area increases hunting pressure as outsiders can enter the area to hunt, thus reducing sustainability of hunting in the area. The proximity of hunted area to markets reduces sustainability of hunting due to increase in commercial hunting and increase in ease of obtaining hunting equipment. However, proximity of a hunted area to ‘source’ area increases hunting sustainability as wildlife repopulates the hunted area from source area.

• Biological factors
Hunting in areas with low production of wildlife is likely to be unsustainable. Production of wildlife in tropical forests is relatively much lower than in open grassland thus hunting in tropical forest is less likely to be sustainable.

• Social factors
Increases in human population coupled with loss of forest area increases hunting pressure over smaller areas reducing hunting sustainability in the area. Hunting is likely to be unsustainable with increased sedentarism as it focuses hunting in one location.

• Cultural factors
Hunting is likely to be unsustainable as traditional hunting methods and practices break down. Hunting is also likely to be less sustainable with advances in hunting technology.
such as use of shotguns and wire snares resulting in hunting being less discriminating and more efficient

- Institutional factors
  Institutions such as the National government or Local government that designate the use of the landscape, establish guidelines for the management of those areas, and regulate their management and the use of wildlife resources are fundamental to levels of sustainability.

- Economic factors
  Increased commercialisation leads to increased demand for wildlife, increasing the intensity of hunting and reducing sustainability of hunting. Access to capital also allows traders to supply hunting technology such as guns, flashlights and wire snares to hunters who could remain indebted to traders resulting in increased hunting intensity to pay back debts.

2.2.6 Hunting and sustainability in Sarawak

In Borneo, human beings have inhabited the forests for at least 40,000 years (Bennett et al., 2000; Chin and Bennett, 2000; Cranbrook, 2000). Throughout that time, people in Borneo have cultivated the forest, extracted forest products, and hunted and used wildlife. Meat from wildlife not only provides much of the animal protein needs for rural people but has, until recently, been an important economic commodity (Lading and Tisen, 2000; Robinson and Bennett 2000). Prior to the total ban in trade of wildlife in 1998, a significant amount of wild meat was sold in towns and markets (Caldecott, 1986; Cleary and Eaton, 1992; WCS & FD, 1996).

Robinson et al. (1999) suggest that the single greatest factor decreasing sustainability of hunting is increased access to tropical forests. The spread of roads increases accessibility to many hunting areas, enhances mobility which also increases infringement on traditional rights by outsiders. This has particularly “... been associated with commercial timber operations and spread of logging roads” (Cleary and Eaton, 1992; p. 193). Over
hunting has also been exacerbated by the increased use of firearms. Caldecott (1986) calculated a total of 61,500 shotguns were registered in Sarawak and estimated that 64 per cent of wild animals were killed by gunshot.

In Sarawak, ease of access is directly and inversely correlated with the densities of primates, hornbills and large ungulates in a forest, including in protected areas (See for example; WCS and FD, 1996; Chin and Bennett, 2000).

2.3 OVERVIEW OF CONSERVATION

The World Conservation Strategy defines conservation as “the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations” (IUCN, 1980; p 1). The question is how can humanity live in balance with nature and that nature continues to supply human needs such as pure water, air and food. This brought about the need to put aside parcels of land as protected areas or wilderness areas where nature could persist indefinitely without human meddling (Noss, 1996). Protected areas have always been the cornerstone of biological conservation and are perceived as the last stronghold of wild nature.

2.3.1 Factors influencing Conservation decisions

To maintain biodiversity and ecological integrity in perpetuity, the ecological system needs to be resilient to environmental changes (O’Connor et al., 1990). O’Connor et al., (1990) suggest that for a system to be resilient to environmental changes, species need to be able to evolve in order to survive in the continually changing physical and biotic environment. In order to maintain biodiversity and ecological integrity in perpetuity, Noss (1992, in Noss 1996) put forward four objectives for conservation at the regional level. They are:

- Represent, in a system of protected areas, all native ecosystems types and seral stages across their natural range of variation.
• Maintain viable populations of all native species in natural patterns of abundance and distribution.
• Maintain ecological and evolutionary processes, such as distribution regimes, hydrological processes, nutrient cycles, and biotic interactions.
• Design and manage the system to be resilient to short-term and long-term environmental changes and to maintain the evolutionary potential of lineages.

These objectives raise a very important component required in the design of protected areas, that is, the need for sufficient genetic diversity to enable evolution to continue to be retained in a population. This consecutively determines the size of populations of species and hence the size of protected areas which will be viable in the long term (O’Connor et. al., 1990).

2.3.1.1 Genetic diversity

A minimum viable population of a species means that there are enough plants or animals to allow the population to cope with disease, habitat damage and other periodic disasters (Noss, 1996). The figure of 500 (300 in the Tropical world) is an estimate for an effective population size of genetically idealised vertebrate species. Thus, the genetic criterion of 500 individuals is used to determine the minimum size of protected areas required to ensure viability of species in the long-term. In the tropical world, scientists have recommended a minimum number of 300 breeding individuals required for a species to be viable in the long-term (Terborgh, 1999). In Sarawak, the minimum number of 300 breeding individuals was used as a criterion for defending the needs for larger protected areas.

Scientists have recommended that a breeding population of 500 individuals in a population is a minimum number to prevent the gradual erosion of genetic variation and adaptive potential (O’Connor et. al., 1990). However, in nature, many animal populations have non-idealised breeding systems thus requiring a much larger number for an effective population size. This consequently requires a much larger protected area to ensure the viability of the species (O’Connor et. al., 1990). The number of animals needed to form a minimum viable population also varies with lifestyle and breeding biology. An example
of this is the grizzly bear in Rocky Mountains USA which has a genetically effective population of 24 per cent, that is only one individual in every four animals can reproduce, thus requiring a minimum of 2000 (500 x 4) individuals for the species to be viable in the long-term. The average density of grizzly bears is four individuals per 259 square kilometres thus requiring an area of 129,500 square kilometres to maintain 2000 bears (Noss, 1996).

In Sarawak, the large rare animals such as orang utans and clouded leopards often occur at densities of less than one breeding animal per square kilometre (Bennett, 1998; Bennett and Shebli 1999). To maintain a minimum viable population of such species, an area of at least 300 square kilometres is required. Batang Ai National Park with an area of 240 square kilometres was gazetted for the protection of orang utan. However, the park would be too small to maintain a minimum viable breeding population of orang utan if the adjacent forest area is removed.

2.3.1.2 Species diversity

At the species level, species in danger of being genetically weakened are the ecological pivotal species or keystone species. Thus keystone species with the lowest densities should be a prime target for management guidelines when designing protected areas (O’Connor et al., 1990). O’Connor et al., (1990; p.61 paraphrased) listed keystone species including large predators such as carnivores and scavengers; large herbivores; mobile, generalised pollinators such as birds, bats and insects; fruit- and nectar-producing plants that are important resources for mobile pollinators and generalised fruit and nectar feeders such as insects, primates and birds, and the insectivores and predators they attract; and low density, large trees.

Keystone species are often low in density, require large areas and have huge effects on the ecosystem. A number of other species would subsequently be affected by their presence or absence, thus, it is crucial from an ecological perspective to ensure the

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4 "Keystone species are those whose effect is large, and disproportionately large relative to their abundance" (Payton et al., 2002; cover note).
viability of such species (Halvorson, 1996). In ensuring a viable population of keystone species, the populations of other, less-demanding species within the system, are also maintained. It is thus essential to maintain viable populations of keystone species within protected areas to ensure the viability of ecosystems in the long-term. For example, keystone species in Sarawak are orang utan, clouded leopards, hornbills, and flying foxes to name some. All these species are wide ranging and low density, sometimes only one individual per square kilometre, and often cover a large range of habitat types. Protecting keystone species requires huge forest areas.

In Sarawak, establishing single protected areas large enough for protecting keystone species is often unacceptable to policy makers and local communities. Hence establishing a series of smaller protected areas connected with corridors, or protected areas surrounded by permanent forest estates or other forest types are often more acceptable. In Batang Ai National Park, primates range outside the park (Meredith, 1993a) into forest areas that are used by local communities for hunting; thus the control of hunting in these areas is crucial for the survival of primates including orang utan.

2.3.1.3 Ecosystems

An ecosystem is a complex web of life. It “... may be defined as an open functioning system comprising living (biotic) elements (that make up a biological community) and non-living (abiotic) materials (making up the physical environment).... involved in the flow of energy and the circulation of material, including the exchange between the living and non-living parts” (O’Connor et al., 1990. p 63). It is dynamic and the physical biological and social components are continuously changing, sometimes in a cyclic manner and sometimes chaotically. It often requires considerable space for it to function normally. As an “... example, the hydrologically defined ecosystem of the Everglades [in Florida] originates in the chain of lakes just south of Orlando ... and extends southwards into Florida Bay” covering most of South Florida (Noss, 1996; p.107). Ecosystems are often spatially and temporally variable and may change rapidly at times such as after

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5 Permanent Forest Estates are land designated to remain under forest in perpetuity, and managed for the purpose of sustainable timber production.
catastrophic fire. Putting aside total ecosystems as protected areas may be impractical, but some integrated management is needed to ensure viability of species.

Managing the system should take into consideration appropriate ecological, spatial, and temporal components within the system (Agee, 1996). It should “…integrate scientific knowledge of ecological relationships within a complex socio-political and value framework toward the general goal of protecting native ecosystem integrity over the long term” (Agee, 1996 p.32). Agee listed the goals of ecosystem management as;

- Maintain viable populations of all native species in situ.
- Represent, within protected areas, all native ecosystem types across their natural range of variation.
- Maintain evolutionary and ecological processes (i.e. Disturbance regimes, hydrological cycles, nutrient cycles).
- Manage over periods of time long enough to maintain the evolutionary potential of species and ecosystems.
- Accommodate human use and occupancy within these constraints.

Adopting such ecosystem management goals in determining the scope and design of protected areas provides a useful guide for policy makers as they incorporate human use and occupancy into the system. The goals are applicable for the management of wildlife, as wildlife does not recognise administrative boundaries (Keiter, 1996). Thus, protected areas should be the critical core of larger ecological complexes accompanied by management beyond traditional boundary lines and incorporating human use and occupancy into the landscape. Hence for this study, Batang Ai National Park is the critical source of wildlife and the surrounding forest is a buffer where hunting is permitted.

2.3.1.4 Landscapes

In continuous natural habitats, ecosystems are dynamic functioning systems dominated by processes such as natural recolonisation. These processes cease when natural areas become increasingly fragmented by human use resulting in a “…landscape of small
sized, exposed and isolated natural habitat patches” (O’Connor et al., 1990; p. 78).
Protected areas are often isolated patches of natural habitat which “... can only contain a
sample of all species and other components of natural diversity occurring in its region ....
[,..., resulting in] fewer species, few individuals per species, and more species represented
by only one or a few individuals” (O’Connor et al., 1990; p. 80). This is similar to
species-area relations in which roughly 30 to 50 per cent of the original species
composition is lost if only 10 per cent of the area is reserved. (Bennett and Shebli, 1999;
O’Connor et al., 1996; WCS & FD, 1996).

Often included in fragmented protected areas are species which require food and habitat
beyond the boundaries of the protected areas. Such species require a continuous access
across boundaries. The availability of food and habitat outside the boundaries of
protected areas may require extensive management. This emphasises the need for the
design and management of protected areas to include corridors of access to lesser-
protected areas to ensure survival of species across boundaries. In Batang Ai National
Park, the orang utan range beyond the boundaries of the park (Meredith, 1993a); thus, to
ensure the survival of orang utan in areas beyond the park boundaries requires the
cooperation of the local communities in their management.

2.3.1.5 Edge effect and Shape of protected areas

“An edge effect occurs when a patch of habitat is left after contiguous habitat is cleared”
(O’ Connor et. al., 1990 p.83). The influence of wind and solar radiation induce
microclimates. Forest environments along the edge become different from the forest
interior resulting in a lesser area available to the original species (O’Connor et al., 1990;
Bennett and Shebli, 1999). Species at the edge are often more abundant, of different
kinds to those in the interior and often include exotic flora and fauna.

The shape of a protected area influences the extent of edge effect. Edge effect is
minimised the closer it is to a circular shape, and below a critical area or width, small or
non-circular protected areas may become entirely edge communities (O’Connor et al.,
1990). In Batang Ai National Park, the local communities have rights and privileges to
farm their customary right land both within and adjacent to the boundaries of the park, thus their cooperation in the management of the area is crucial to reduce edge effect and to promote the conservation values of the park.

2.3.2 Conservation efforts and local communities

In recent years, the role of protected areas in conservation has been questioned (Noss, 1996). He pointed out that protected areas alone are unlikely to maintain viable populations of many species because they are usually too small and isolated from one another, leading many biologists and conservationists to recognise their limitations (Noss, 1996). While protected areas are recognised as an essential part of any conservation strategy in almost every region of the world, much more land and water must be protected if conservation values are to be achieved (O'Connor et al., 1990). However, preserving huge wilderness areas is impractical and unacceptable to local communities, thus, the management of conservation areas should cover land outside protected areas taking into consideration human use to enhance their conservation values.

“Throughout the tropics, people residing near national parks bear disproportionate costs of wildlife conservation, whether they lose crops and livestock to raiding wildlife, or must forgo access to natural resources. To offset these costs and build support for parks, conservationists aim to transfer economic benefits to local communities” (Archabald and Naughton-Treves, 2001; p. 135).

Local communities living in and around Protected Areas often have important and long-standing relationships with the area and most conservationists agree that economic benefits should be shared with those who are affected (e.g. Archabald and Naughton-Treves, 2001; Gillingham and Lee, 1999; IUCN, 1992; Vandergeest, 1996). Conservationists hope to improve local attitudes toward conservation and national parks by channelling tourism revenue to local residents (Archabald and Naughton-Treves, 2001). However, “conservation biologists protest that wildlife populations are at risk when local economic concerns have priority over ecological principles” (Archabald and Naughton-Treves, 2001; p.135).
In a number of African countries where community based conservation (CBC)\(^6\) programmes are in place, long-term success is problematic because local people are reacting to outside initiatives (Hackel, 1999). "The program considers the needs of local people primarily as a strategy to win their favour for the park, and enough money must be generated from tourism for local people to receive significant financial gain indefinitely" (Hackel, 1999; p. 729). A study in Uganda by Archabald and Naughton-Treves (2001) shows that both implementers and beneficiaries listed tourism revenue-sharing as the most important advantage of living next to a national park. Channelling revenue from tourism to residents adversely affected by wildlife offers a non-consumptive means to generate income for local people.

Tourism is viewed as the critical ingredient for generating economic benefits, "... but it requires on-going promotion, facilities, and management flexibility if it is to succeed" (Hackel, 1999; p. 729). The main challenge is whether sufficient jobs and money can be generated from tourism for local people to refrain from exploiting the park's resources. The study in Uganda also identified potential obstacles such as numerous stakeholders with differing priorities, poorly defined policies, weak institutions and corruption as four of the impediments to tourism revenue-sharing success and the literature concluded that "tourism revenue-sharing programmes have met mixed success" toward achieving conservation goals (Archabald and Naughton-Treves, 2001, p. 135).

2.3.2.1 Protected areas and local communities
For centuries, "... communal ownership has governed the sustainable use of public resources in rural societies" (Yu, Hendrickson and Castillo, 1997; p. 136). In much of the developing world "... the breakdown of such communal resource sharing and policing due to rapid modernization has been a fundamental cause of environmental degradation" (Yu, Hendrickson and Castillo, 1997; p. 136).

\(^6\) Community-based conservation (CBC) refers to wildlife conservation efforts that involve rural people as an integral part of a wildlife conservation policy.
Studies in Africa show that it is likely that people will continue to settle and cultivate new areas in PAs as one of their primary responses to population growth and the need for land (Norton –Griffiths, 1995 cited in Hackel, 1999). In some parts of Thailand, poverty is the motivating factor for the use of park resources by villagers (Dearden, Chettamart and Emphandu, 1998). However, Vandergest (1996) suggested that in Southern Thailand, the use of resources in PAs is not driven by poverty but villagers’ claims to traditional land and resources located in the PAs. Dearden, Chettamart and Emphandu (1998; p. 195) pointed out that “desire to improve your lot in life does not evaporate when some ‘poverty line’ is crossed, ... [thus] elsewhere, resources [in PAs] may be exploited by wealthier people”. In Thailand, many of the major non government organisations (NGOs) “...agreed that environmental degradation in rural Thailand stems not from local use of PAs, but from a combination of bureaucratic mismanagement, capitalism, and the dispossession of rural communities from the resources that they used to manage (Vandergeest, 1996; p.265).

“The importance of local community support for the survival of PAs has been widely acknowledged and studies in developing countries have found varying levels of local support for PAs, many of which are determined by perceptions of, and attitudes to, PAs and their management” (Ite, 1996; p. 251). Studies also suggest that local support or resentment of PAs is dependent largely on social, cultural, political and economic factors, which are generally influenced by the perceived costs and benefits of PAs to communities especially in areas with a long history of traditional resource use and management (Gillingham and Lee, 1999; Ite, 1996).

2.4 CONSERVATION EFFORTS IN SARAWAK

Sarawak recognised the need to conserve its natural resources in the 1950s. Two pieces of legislation were enacted, the Wild Life Protection Ordinance in 1957 and the National Parks Ordinance in 1958. These provided for the establishment of protected areas, either as Wildlife Sanctuaries or National Parks. Sarawak also recognised that local communities were living or using the resources within areas needed as protected areas.
Thus, the Ordinances required that their rights to the resources be respected. This resulted in the granting of rights and privileges for the local people to continue using resources within protected areas and in some cases to reside there (Tisen and Meredith, 2000).

The Wild Life Protection Ordinance and the National Parks and Nature Reserves Ordinance provides for the establishment of areas for the protection and conservation of Sarawak’s unique natural resources. They are accorded total protection by law and are categorised as national parks, nature reserves and wildlife sanctuaries. Areas of fragile wildlife habitats that are vital for protection of wildlife have been gazetted as wildlife sanctuaries.

A National Park is defined as any area constituted for conservation and protection of wildlife and their habitat; preservation of geological or physiological features; facilitating study and research on the biodiversity; protection of the natural scenic beauty, and the historical sites and monuments; and affording opportunities for public appreciation, enjoyment and education of the natural scenic beauty, wild life habitat, flora and fauna, geological and physiographical features, historical sites and historical monuments of the State (Sarawak Government Gazette, Part 1, 1998a). Nature reserves serve similar functions as national parks except for differences in physical size. A nature reserve consists of an area of one thousand hectares or less. Any area bigger than that may be considered for conversion into a national park or wildlife sanctuary. Wildlife sanctuaries are areas established strictly for the protection of wildlife and its habitat and are not open to the general public. Hence they are not used for nature tourism and recreation (Sarawak Government Gazette, Part 1, 1998b).

The management of protected areas in Sarawak is under the auspices of the Forest Department which is responsible for all conservation matters in the State, with little or no input from the local communities (Tisen and Meredith, 2000). Historically, the involvement of local communities was limited to some socio-economic projects such as the Integrated Conservation and Development Project (ICDP), and courses such as park guide training, boat operator training, and conservation education programmes. Dialogue
during the initial establishment of protected areas has also been encouraged (Tisen and Meredith, 2000).

2.4.1 A comprehensive conservation strategy for Sarawak

A strategy for creating a comprehensive system of protected areas in Sarawak includes the following major goals (Bennett and Shebli, 1999; p. 39 paraphrased).

- all of Sarawak's plant and animal species are represented in one or more protected areas;
- each protected area is big enough to be viable if isolated;
- if it is impossible to gazette a large enough area for long-term viability, then the protected area must be surrounded by large areas of permanent forest estate where hunting is controlled and timber extraction done sustainably, or two or more protected areas must be linked by a wider corridor of forest through which animals can pass free from disturbance and hunting.

A proposal for the establishment of a comprehensive system of protected areas through gazettement of new areas and extension to a number of existing areas has been tabled for approval by the State Government.

2.4.1.1 Rationale for the strategy and action taken

All of Sarawak's plants and animals must be represented in one or more protected areas as no single area in Sarawak contains all species found in the State (WCS & FD, 1996).

Each area contains a different array of species because many species are only found in one habitat, e.g., mountain species are not found in the lowlands areas and vice versa. Many species have limited natural distributions while others are limited only to one or two limestone outcrops or individual river systems (Hazebroek and Abang Moshidi, 2001). For example, Samunsam Wildlife Sanctuary and Maludam National Park were established for the protection of proboscis monkey and the red-banded langur respectively. Both species are endemic to Borneo and the red-banded langur exists only in Maludam (Bennett, 1994; Bennett and Gombek, 1993). Batang Ai National Park was established for the protection of orang utan (Sarawak Forest Department, 1984).
For most species, there are limited or no data on their distribution, so the only way to ensure that all species are protected inside at least one protected area is to protect representative examples of all main habitat types and protect areas in different parts of the State (Bennett and Shebli, 1999). Currently, most protected areas are located in the southern and northern regions of Sarawak with very few in between. The proposed "protected area system" includes establishing diverse protected areas covering different parts of the State. This will also maximise the diversity of attractions for tourists which may promotes the socio-economic status of the local communities through tourism thus reducing the possibility of ill-feeling of local people towards conservation (Ahmad, et. al., 1999).

Each protected area must be large enough to be viable if isolated (Bennett, 2000; WCS & FD, 1996). It is better to have a few large protected areas than many small ones (Bennett and Shebli, 1999). If a protected area is small, animals often depend on resources outside the protected area. It is especially likely if the area outside contains important resources such as salt licks or habitats not found inside the protected area. In situations where animals depend on resources outside, even for only a part of the year, then the protected area must be extended to include those resources (Bennett and Shebli, 1999). For example, further studies on habitat use of proboscis monkey in Samunsam Wildlife Sanctuary found that it depends on resources outside the sanctuary at times of food scarcity in the sanctuary (Rajanathan, 1992). Though the resources may be used only in time of food scarcity and for a short time in a year, it is critical for the survival of the species. Thus the sanctuary was extended to include the resources. In Batang Ai National Park, Meredith (1993a) found that primates range outside the park and recommended an extension to the park or creating some kind of buffer zone covering the area to improve conservation of wildlife.

Each protected areas must be large enough to reduce "edge effects". Along the edge of any protected area, the flora and fauna are affected by differences in availability of sunlight, intrusion of species from outside, and lower densities of some species due to collection and hunting (Bennett, 2000). To minimise such effects, each protected area
should be as large as possible and to maximise the area-to-edge ratio, each protected area should be as round as possible (O'Connor et al., 1990). Minimising edge effects also facilitates enforcement and make it more cost-effective. Lanjak-Entimau wildlife Sanctuary was extended to allow for a more rounded area to reduce edge effects and to enhance the protection of the area.

Where it is not feasible to extend a protected area sufficiently to allow it to be viable in its own-right in the long term, the protected area must be surrounded by large areas of permanent forest estate where hunting is controlled and timber extraction done sustainably (Bennett, 2000). Hence, the permanent forest estate and protected areas together can protect viable populations of rare species roaming throughout the whole area. Two or more protected areas must be linked by a wide corridor of forest through which animals can pass free from disturbance and hunting (Bennett, 2000). The whole area thus acts as a large biological unit. Consideration for, and placement of corridors between protected areas are currently the main issues in the design of the protected area system in Sarawak.

In Sarawak only 22 per cent of all proposed and existing protected areas and wildlife sanctuaries are larger than 300 square kilometres, hence existing areas should be extended (Bennett and Shebli, 1999). A number of protected areas were extended to satisfy the above requirements such as Gunung Mulu National Park, Lanjak-Entimau Wildlife sanctuary and Similajau National Park to name some. Batang Ai National Park with a total area of 240 square kilometres is too small for what it is intended to protect. Thus, the continued existence of the forest areas surrounding the park is crucial for Batang Ai National Park to achieve its conservation objectives.

2.4.2 Initiatives by Sarawak Government to conserve wildlife

In 1996, the Sarawak Government commissioned a Master Plan for Wildlife, which comprised a strategy to balance wildlife conservation with development in the State. Following its recommendations, the Government passed a new law, the Wild Life Protection Ordinance 1998, which banned all commercial sales of wildlife and wildlife
products taken from the wild. It recognised that rural communities depend on wild meat and thus did not ban hunting. The new law was strictly enforced in urban areas followed by a widespread publicity and education campaign.

In April 1999, the Director of Forests issued a directive to all logging companies banning hunting by logging company employees and transporting wildlife on logging company vehicles. Logging companies were also instructed to close all non-essential roads by bulldozing their entrance as soon as a block\(^7\) was closed, to prevent them being used for further hunting using vehicles. The government recognised that managers of logging companies needed to be brought on board and made responsible for implementing the strategies recommended in the master plan, thus, in April 2000, all logging company managers were gazetted as honorary wildlife rangers. Extensive training programmes, as well as continued monitoring is required to ensure the effective implementation of the strategies. In some areas, rural hunters commented that there were increases in wild pig numbers as people no longer hunted for trade (Chin and Bennett, 2000; Bennett et al., 2001).

**2.4.3 Protected areas (PAs) in Sarawak**

Currently, Sarawak has fifteen National Parks, five Nature Reserves and four Wildlife Sanctuaries covering a total area of about 370,000 hectares or three per cent of the total area of the State. Further proposals have been made to create new areas and to extend several existing areas. The percentage of protected areas will be increased to 11.5 per cent of the total area of the State when all these are fully realised (Cotter, 1999).

Sarawak’s system of protected areas aims to conserve in perpetuity all of Sarawak’s species of flora and fauna, and be representative of all habitat types, all with many values and a wide range of uses. The protected areas also provide venues for tourism, resources for local communities, and environmental protection. To conserve all species and habitats in perpetuity, Sarawak has adopted the International Union for the Conservation of Nature (IUCN) recommended action that at least 10 per cent of its land area should be in protected areas (Bennett and Shebli, 1999; WCS & FD, 1996). The International Tropical

\(^7\) A unit area of 100 ha in a logging concession.
Timber Organisation (ITTO) also supported this figure on the basis that, for Sarawak to be sustainable in its tropical timber production, Sarawak must put aside 10 per cent of land as protected areas and 30 per cent as permanent forest estate (ITTO, 1990). Sarawak’s protected areas cannot conserve all of the State’s species and habitats if they merely comprise an aggregation of randomly selected areas to make up this percentage. Thus, to provide effective conservation, protected areas should be gazetted according to a planned strategy (Bennett, 2000).

As Sarawak continues to develop, protected areas will increasingly become isolated in a sea of other land use. This means that protected areas must be large enough to be viable if isolated. Hence, any single protected area must be large enough to protect the rarest species within it; otherwise not only will these species become extinct in the long term, but their loss will cause an ecological imbalance throughout the system (O’Connor et al., 1990; WCS and FD, 1996). This inevitably will result in the extinction of other species. At present, most of Sarawak’s protected areas are too small to protect wide-ranging, and sometimes rare species such as carnivores (Bennett, 2000). Thus, management of wildlife extends beyond the protected areas, covering the surrounding forest often used by local communities in its framework.

2.4.3.1 Rights and privileges of local communities in protected areas

The National Parks and Nature Reserves Ordinance and the Wildlife Protection Ordinance make provision to recognise the traditional rights and privileges of local communities (Sarawak Government Gazette, Part 1, 1998a; Sarawak Government Gazette, Part 1, 1998b). They recognise rights held by natives or native communities when the legal process of constituting a protected area begins, provided that the rights date back at least to the 1950s that is, 16th February 1956 for a National Park or Nature reserve (Sarawak Government Gazette, Part 1, 1998a) and 1st January 1958 for a Wild Life Sanctuary (Sarawak Government Gazette, Part 1, 1998b). The rights and privileges conceded to the local inhabitants living within or near a protected area depend on the degree of use of the area prior to establishment, and vary widely from one protected area
to another. Tisen and Meredith (2000; p. 43 paraphrased) came up with five key points pertinent to the rights and privileges conceded to local communities:

- Rights and privileges are set out in the Declaration establishing the protected areas; there is no mechanism for reviewing them at a later date.
- In many cases no restriction was placed on the use of the resources harvested, and thus they can be harvested for sale. This applies to the older protected areas, when it was probably assumed that trade in wild animals and plants would be insignificant.
- Several protected areas have enclaves, which are legally excluded from the protected areas, even though they may lie within the boundaries. In most cases, these enclaves are alienated land with well-defined boundaries registered under the Land Code. In Batang Ai National Park and Loagan Bunut National Park, the enclaves consist of land subject to Native Customary Rights; the extent and position of these was not defined at the time of establishing the park, and it is not clear which land comes under the jurisdiction of the local communities or the Forest Department.
- Apart from these enclaves, the only people who may reside in a protected area are the nomadic Penan in Gunung Mulu National Park.
- These rights and privileges do not permit holders to harvest protected or totally protected species as listed in the Wild Life Protection Ordinance, or to trade in wild meat from mammals, birds, reptiles or amphibians.

Apart from specifying the area allocated to each community, the Declaration of the earlier protected areas placed no restrictions on how these resources are to be used or how they should be managed (Tisen and Meredith, 2000). For example, the first protected area was Bako National Park, gazetted in 1957, covering an area of 2,727 hectares in the Kuching Division. The inhabitants of Kampong Bako may remove poles for their own use for constructing fish traps from a strip of 200 fathoms (360 m) wide along the coast.

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8 Land Code is the law governing all matters on land in Sarawak.
9 Native Customary Rights is the right of the Native Communities in Sarawak with respect to areas used traditionally for farming prior to 1958 as laid out in the Land Code.
between Tanjong Pandan and Tanjong Sebur. Native fishermen are permitted to come ashore within this zone to collect poles, and to use them for constructing temporary shelter and to dry their nets (Forest Department, 1988).

In Batang Ai National Park, all land subjected to Native Customary Rights inside the park boundary is excluded from the park and the inhabitants of seven longhouses communities may fish, hunt, gather jungle produce and take timber for their own consumption or use from the park (Meredith, 1993b). These privileges are subjected to Section 14 of the National Parks and Nature Reserves Ordinances, which means that they cannot be exercised without permission from the Director of Forests (Meredith, 1993b).

2.4.3.2 Participation of local communities in management of protected areas
Participation of local communities in management of protected areas in Sarawak is not a new concept but it is only in the last few years that it has taken on a sense of urgency. Sarawak’s forests have long been a most important source of resources to sustain its people (Hong, 1987). The gradual establishment of a protected area system for nature conservation has been seen by some to separate people, especially park neighbours, from their traditional rights to harvest resources. Yet other interest groups have viewed park resources not as sources of traditional sustenance, but as sources for profit through the illegal sale of wildlife and other forest products.

Often, the local communities view protected areas as “... an obstruction to their traditional ways of lives, and that they needed to defend their rights constantly” (Tisen and Meredith, 2000; p. 42). On the other hand, managers of protected areas saw these rights and privileges “... as externally imposed constraints which made conservation objectives difficult or almost impossible to achieve, but beyond their control” (Tisen and Meredith, 2000; p. 42). This often resulted in an atmosphere of conflict between managers of protected areas and the local communities.

In many of Sarawak’s protected areas where local people control the resources subject to privileges, the Forest Department controls the rest of the ecosystem. Management of
ecosystems for conservation or sustainable harvesting requires some sort of unified or collaborative system, and the challenge is to move from split management to joint management (Tisen and Meredith, 2000). A condition of 'split management' exists where the protected area Agency has full control over some aspects of management and other stakeholders have full control over other aspects (Tisen and Meredith, 2000).

The Master Plan For Wildlife recommended that a Special Committee be established for each protected area (WCS & FD, 1996). This would provide a forum for collaboration in resource management and also the structure to channel the benefits derived from protected areas to local people. Part of the revenue from visitors' entrance fees or researchers fees could be used for projects benefiting the local people as compensation for voluntary reductions in harvesting (WCS & FD, 1996).

Ultimately, the Special Committee was expected to evolve into a mechanism for sharing authority in a formal way. The special committee should develop strategies to bring harvesting down to sustainable levels, or even to eliminate it from protected areas. Those strategies might involve use of revenue such as entrance fees monies or develop activities to substitute for the resources harvested, but such development activities must not result in intensified pressure on protected areas. Special Committees have been established for a number of protected areas e.g., Lambir Hills National Park, Niah National Park and Similajau National Park, however, one has not yet been implemented in Batang Ai National Park. Where they have been established, there is little evidence to suggest they are successful.

2.4.3.3 Local communities in national park

The increase in development in Sarawak has increased the mobility and spending power of the people which in turn has put high demands on the natural resources including wildlife. Wildlife surveys conducted in the early 1990s showed that hunting is causing some animals to become rare or locally extinct in the State. Even in protected areas, hunting by people with rights and privileges has been considerable and harvesting levels were clearly unsustainable (WCS & FD, 1996). The number of people with hunting
privileges to hunt for subsistence is 1.4 to 3.8 times the maximum sustainable level. In all three of Sarawak’s largest protected areas, harvesting potentially far outstrips the productivity of the land involved if local people obtain all their protein by hunting (Tisen et al., 1999).

Unsustainable harvesting makes it impossible for a protected area to fulfil its legal purposes for conservation. In Batang Ai National park, people with rights inside the park are allowed to hunt, fish and gather jungle products for their own use but not for sale or trade. Horowitz (1998) suggests that the regulation is extremely difficult to enforce and is often ignored by park officers. Horowitz (1998) also observed that several residents appear to be unaware of the regulation and that the people said that they needed to sell these products for their subsistence.

A new approach to protected area management, one which included management of harvesting, was clearly needed. However, the remoteness and rugged terrain of many protected areas make it impossible for the government to adequately protect them. Thus the support and collaboration of the local communities and their participation in management is vital to ensure that the objectives of conservation are met (Ahmad et al., 1999). In Batang Ai National Park, Park officers together with the Police conducted explanatory tours to all longhouses in the area explaining the restriction on hunting within the park’s boundaries. The local longhouse leaders were given a two day course on Park regulations and reasons for conservation. They were also appointed as ‘Honorary Wildlife Rangers’, a position that gives them the authority to assist park officers in enforcing park rules and regulations (Horowitz, 1998).

To promote sustainability of wildlife, the State Government enacted the Wildlife Protection Ordinance 1998 which came into force on May 1998, banning all sales of wildlife and wildlife products taken from the wild. In spite of all these efforts, a market survey conducted at Lubok Antu in late 1998 recorded a regular sale of wild meat from Batang Ai (Lading and Tisen, 2000). Extensive enforcement efforts and public education programmes targeting major towns curtail illegal sale of wild meat in most parts of the
state. However, evidence of discrete sales of wild meat throughout the state has been found. In February 2003, a market survey conducted in Lubok Antu showed that meat of wild pigs, deer, porcupine and bear were sold openly (Jawa, 2003).

2.4.4 Conservation in Ulu Batang Ai

In Batang Ai, among the Iban communities, households held rights to certain resources such as land and fruit trees which were used exclusively by the household. The community held rights over the forest area referred to as ‘pemakai benua’ which are mainly used for hunting and gathering forest produce and are regulated by the community. When Ulu Batang Ai was established as Batang Ai National Park, the local communities were granted rights and privileges to continue to hunt, fish and gather forest produce from the area. Batang Ai National Park was established for the protection of orang utan, however, the total area of 240 square kilometres is too small to sustain a viable population of orang utan. The orang utan range beyond the park into surrounding forest, and their continued survival depends on the existence of the forest outside the park (Meredith, 1993a). To achieve its conservation objectives, it is crucial to ensure the continued existence of the forest surrounding the park as well as the support of local communities towards conservation efforts. For Batang Ai National Park, “... the greatest challenge ... is the need to involve local communities as active partners” (Mishra, 1994; p.185)

2.5 SUMMARY OF CHAPTER

Protected areas alone are unlikely to maintain viable populations of many species because they are usually too small and isolated from one another, leading many biologists and conservationists to recognise their limitations (Noss, 1996). While protected areas are recognised as an essential part of any conservation strategy in almost every region of the world, much more land and water must be protected if conservation values are to be achieved.
Putting aside protected areas large enough to ensure wildlife viability is often not possible and not acceptable to local communities. Conservation management efforts must be able to overlap into areas beyond the protected areas. Local communities often use protected areas for their subsistence, thus conservation strategies must incorporate human use in management strategies and where appropriate encourage joint management between conservation authorities and local communities.

Batang Ai national Park with an area of 240 square kilometres was gazetted for the protection of orang utan; however for orang utan to continue to survive requires a minimum area of 300 square kilometres. Furthermore, local people with gazetted rights and privileges to hunt, fish and gather forest produce from the park are more than the carrying capacity of the forest (Ahmad et al., 1999). These impediments constitute a paradox which undermines the conservation potential of the park. Because extensive forests surround Batang Ai National Park, wildlife including protected species range beyond the park boundaries into areas outside where local communities farm, hunt and gather forest produce. Thus, the cooperation of local communities is crucial to achieve the conservation objectives of the park.

Park managers recognise that local communities should be able to benefit from the park if they are to support conservation efforts in the park. However, the traditional methods of resource use by local communities in the park may weaken the conservation values of the park, prompting park managers to seek alternative forms of benefits for local people.
CHAPTER THREE
TOURISM AND LOCAL COMMUNITIES

3.0 INTRODUCTION

The objective of this chapter is to discuss tourism and local communities within the context of developing countries. The chapter begins with an overview of tourism, a description of factors influencing tourism as in the concept of the tourist area destination lifecycle, local communities’ responses to tourism, and impacts of tourism. It then describes tourism and factors which influence local economics, and sustainability of tourism. Subsequently, it discusses tourism in developing countries such as Malaysia and involvement of local communities in tourism in Sarawak with emphasis on the Iban communities in Batang Ai. Findings of past research related to tourism and local communities in Batang Ai will be discussed. A study by Walpole and Goodwin in Komodo National Park, Indonesia will be used to illustrate local economic impacts of tourism. This study is selected for its similarity to Batang Ai National Park in that both are located in a developing country, the establishment of the Park affects local communities who are mainly farmers and fishermen, and tourism to the park is controlled by people from outside the communities. Finally, the chapter concludes with a discussion of the research questions which focus on tourism and the community in the Batang Ai study area.

3.1 A BRIEF OVERVIEW OF TOURISM

Tourism has grown significantly since the beginning of the commercial airline industry and is now a major force in global trade. It is widely recognised as the world’s largest industry and there has been a steady increase in world tourism for the last ten years (Hall and Page, 1999). There has been an average annual growth rate of 4.56 per cent in world tourism arrivals during the period of 1980 and 1997, rising from 286 million in 1980 to 611 million in 1997 (WTO, 1999a). This generated about $US 105 billion in 1980 rising to $US 436 billion in 1997, an increase of 8.72 per cent per annum in world tourism
receipts (WTO, 1999a). The World Travel and Tourism Council (WTTC) estimated that the travel and tourism industry generated 231 million jobs in 1998, or about one in nine workers worldwide (WTO, 1999b). It plays a vital role in the social, cultural and economic development of most nations, and has the potential to preserve heritage and to destroy it (For example see, Mathieson and Wall, 1982; Butler, 1980; Cater, 1994; Chalker, 1994; Ioannides, 1995).

Higher disposable incomes, smaller family size and demographic changes in many nations, particularly the developed countries, coupled with lower transportation costs, improved public health standards and hospitable environments in many destinations have brought tourism within the reach of many people. Improved infrastructure and marketing, and the pricing and packaging of tourist products have accelerated the expansion of tourism, reaching even the most isolated parts of the world such as the Pacific Islands (Hall and Page, 1995).

‘Adventure travel’ including tourism to protected natural areas or ecotourism is the fastest growing segment of tourism (Ceballos-Lascurain, 1991). Ecotourism is defined as “tourism that involves travelling to relatively undisturbed natural areas with the objectives of admiring, studying and enjoying the scenery and its wild plants and animals, as well as any cultural features found there” (Ceballos-Lascurain, 1991; p. 31). Ecotourism should promote conservation, has low visitor impacts, allows active involvement of and benefits to local populations.

3.1.1 The concept of a tourist destination life cycle

Butler (1980) emphasises that tourist attractions are finite. They must be more carefully protected and preserved, development kept within predetermined capacity limits, and potential competitiveness maintained over a longer period (Butler, 1980). Thus, the development of tourist areas should not be interpreted purely in economic terms as this could lead to the “tragedy of the commons”, a condition which suggests that environmental decline is inevitable in the absence of assigned responsibility for resources protection (Hardin, 1968).
Tourist destination area evolution is influenced by both internal and external factors. Like any industry, tourism is deeply rooted in an underlying economic and political structure, hence economic and social forces also influence the evolution of the tourist destination. The internal factors influencing the carrying capacity of the area include environmental factors such as land scarcity, water quality and air quality; services such as transportation, accommodation, and other tourism related services; and social factors such as crowding and resentment by the local population (Butler, 1980; Haywood, 1986; Getz, 1992; Simmons and Leiper, 1993).

The end result of the above factors for a destination is that tourists may now avoid the place, locals are unhappy and the cultural or natural environments demeaned or destroyed. The aim of management must be to avoid this situation by thoroughly understanding its origins and putting in place systems for monitoring and control.

3.1.2 Residents' response to tourism

Tourism does produce both positive and negative results in host communities, and their respective levels vary depending on the socio-cultural structure of the country and the level of tourist development (Mathieson and Wall, 1982; Hall, 1991). The changes produced by touristic developments affect people's habits, daily routines, social beliefs, and values (Dogan, 1989; Mathieson and Wall, 1982; Zeppel 1997a). Such changes are an important source of psychological tensions and people have to develop strategies to decrease such tensions, and to continue their effective psychological functioning.

On the one hand, tourism generates employment, income and tax revenue and acts as a catalyst for regional development (Archer and Fletcher, 1990; Parliamentary Commissioner for the Environment [PCE], 1997; Mathieson and Wall, 1982). On the other hand, it has the potential to inflict detrimental impacts on host communities and their environment. Tourism can have social effects on host communities, which “... effect changes in collective and individual value systems, behaviour patterns, community structures, lifestyle and quality of life” (Hall, 1991; p.136). It can also effect host communities culturally by influencing normative behaviour. Norms are described as “...a
set of shared behaviour expectations which community members help to define and, in turn, are expected to follow” (Wall, 2000; p.92). Normative behaviour is seen in art and crafts, music and language, behaviours, values, and belief structure (Lawson, et al., 1995).

Residents' reactions to tourism can take the form of resistance if it is perceived negatively, or if it is perceived positively, they may react to it by wholly or partly incorporating these new behaviours into their culture. Among the major negative consequences of tourism are decline in traditions, increased materialism, increase in crime rates, social conflicts, crowding, environmental deterioration, and dependency on tourism (Mathieson and Wall, 1982). It is frequently asserted that the traditions of host countries are weakened under the influence of tourism, thus the loss of authenticity and identity of the cultures resulting from the inhabitants' tendency to imitate tourists.

It is widely agreed in the literature that there is a threshold of tolerance of tourists by hosts that varies spatially and temporally (Mathieson and Wall, 1982). As long as the number of tourists and their effects remain below this threshold and the economic effects remain positive, tourist are usually accepted and welcomed by the host community (Mathieson and Wall, 1982). Doxey (1975) postulated that the responses of residents change through time in a predictable sequence through the stages of euphoria, apathy, annoyance and antagonism. The fact that crowding and noise resulting from the concentration of tourists in a particular destination destroys the peace and tranquillity of the hosts has always been a source of negative attitudes toward tourists. Tourist developments have also led to a decrease in attractiveness of destinations (Ioannides, 1995).

Dogan (1989) postulates that tourism produces both positive and negative effects on local communities, but their respective levels vary depending on the socio-cultural structure of the country and its touristic development. Various combinations of strategies may exist simultaneously within a region, but initial responses during the first stages of tourism tend to be more homogeneous, particularly if the community is rurally based and
homogenous itself (Wall, 2000). As tourism develops, the type of tourist and the cultural distance between the tourists and host community will affect the community’s response. As tourism continues to grow, a diversity of responses may emerge, and groups with different interests and characteristic responses to tourism may be formed as a result.

3.1.3 Impacts of tourism

Tourism flourishes in quality environments. The environment, however, is a perishable commodity, i.e. hard to restore and in short supply while tourism the consumer, is dynamic and fast growing (Butler, 1980; OECD, 1980). Maintenance of good environments is essential to sustain or foster further growth of tourism. Tourism is like a double-edged sword, it can provide economic benefits and diversification of the economy and promote the conservation of nature. It also exerts a lot of pressures on the resources of destinations and, if badly managed, will affect the very resources on which it thrives (Ioannides, 1995).

Rapid growth in tourism may result in a degree of environmental degradation. Often, highly sensitive areas such as breeding areas for wildlife, fragile environments such as small islands where turtles lay their eggs, mangrove forests, lake sides, and mountain summits are all premium attractions for tourists, making their degradation seem inevitable (See for example, Backer, 1995; Booth and Cullen, 1995; Barton, et al., 1998; Terborgh, 1999; Crawford, et al., 2001). In certain areas, degradation of the environment has already brought about a decline in the growth of tourism (OECD, 1980). Recreational use of natural areas results in habitat degradation, soil erosion and compaction, animal disturbance, water and air pollution, contaminated soil and damage to vegetation (PCE, 1997, Hammitt and Cole, 1997). For example, in Bako national Park, Sarawak, the more common adverse environmental impacts observed include litter, erosion, damage to vegetation and disturbance to wildlife (Chin, et al., 2000).

“Tourism, as an exploiter of natural resources, is also environmentally destructive” (Milne, 1992; p.200). For example, in the Pacific Islands, an increase in demand for handicrafts added strains on resources -- pandanus plants for weaving baskets were in
short supply and most wood for Cook Island carvings has to be imported (Milne, 1992). In Mauritius, exploitation of coral by souvenir businesses caused much of the death of the coral reef (Jogoo, 1993 cited in Ioannides, 1995). In the Caribbean, the tourist industry has led to unsustainable exploitation of construction materials on many islands (Conway, 1983, cited in Ioannides, 1995) and in Nepal, hill trekkers in search of firewood cause excessive damage to the fragile ecosystem (Zurick, 1992, cited in Ioannides, 1995)\(^{10}\).

Tourism can have negative impact on local communities if it is badly managed. For example, at the Royal Chitwan National Park in Nepal, renowned for its one-horned rhinoceros and tigers, outsiders took most of the well-paid jobs as the local people lacked the required education background. The local people were losing instead of benefiting from tourism as the cost of commodities had increased much faster than in other areas (Dhakal, 1991).

Tourism can weaken mutual help and cooperation based on traditional norms, increase intergenerational conflicts, and destroy intimate, personal and friendly relations. It “... brings certain informal traditional human relations into the area of economic activity, turning acts of once spontaneous hospitality, for example, into commercial transactions” (de Kadt, 1979; p. 14). The disruption of intimate and personal relations is associated with commercialisation and materialism in human relationships which is perhaps one of the most common consequences of tourism. Commercialisation signifies demanding money for services which used to be provided free. Thus, a value system based on moral values is replaced by one based on money. Tourism transforms human relationships into a source of economic gain and the proportion of non-economic relationships diminishes. Previously warm and intimate relationships are transformed into commercial forms.

Relevant to management is that visitors are an accepted component of the environment and the aim is to achieve an appropriate compatible balance between use and protection (DOC, 1997). However, impact on resources does not occur in isolation, it is dynamic.

\(^{10}\) In the case of Nepal, it is not trekkers per se who collect and burn wood, but the cooks and porters who support the trekkers. Hence it is the presence of the tourists that causes the problem.
and changes in space and time. The concentration or dispersal of use has a lot of implications for management in that dispersal reduces the amount of use on a site, thus reducing the impacts. On the other hand, dispersal spreads impacts over a wide area which makes management more difficult. Thus, the level of management intervention should be based on a case-to-case basis depending on the particular conservation values and objectives for specific areas.

3.2 TOURISM AND THE LOCAL ECONOMY

“Tourism can bring many benefits, by creating employment, stimulating economic and social welfare, generating foreign exchange, providing improvements to transport infrastructures, and creating recreational facilities and services” (Ceballos-Lascurain, 1991; p. 31). In some countries, tourism expenditure represents a relatively important source of foreign exchange earnings and tourist revenue easily outstrips other export earnings (see for example; Wilkinson, 1987; Milne, 1992).

“With increased ecotourism has come the idea that tourists are an economic force that can promote the conservation of the natural attractions that entice the tourists in the first place” (Yu, Hendrickson and Castillo, 1997; p. 130). Revenue from tourists, in the form of park fees, domestic airfares, lodging and meals, the sale of local services and goods such as guiding and handicrafts, and tax revenues levied on the above, should be distributed among the population that is most likely to exploit the natural area (Yu, Hendrickson and Castillo, 1997). “In practice, ... local populations are often unable to provide the services that foreign tourists demanded or are not contracted to do so, leaving large tourism operators with neither competition, nor the incentive to distribute the wealth” (Yu, Hendrickson and Castillo, 1997; p. 130). Conservationists thus face a major challenge in establishing the link between conservation and local income through tourism.

In Tombopata, Peru, “tourism generated the revenues that employed locals and paid for the maintenance and preservation of the reserves, thereby providing the direct link
between habitat conservation and local incomes” (Yu, Hendrickson and Castillo, 1997; p. 132). However, “… there is no guarantee that increased incomes would reduce the rate at which forests are converted to farmlands or even that the rate of hunting would decrease” (Brandon and Margoluis, 1996; cited in Yu, Hendrickson and Castillo, 1997; p. 135). “More likely, the opposite will happen. Cash income may make the cost of shotgun cartridges and of gasoline for chainsaws less forbidding” (Yu, Hendrickson and Castillo, 1997; p. 135). Further, by providing employment, tourism operations near to protected areas could have a magnet effect of attracting more people to the protected areas, compounding existing problems.

“Nature tourism based on protected areas offers a means both of generating direct revenues to offset management costs, and the promise of economic benefits for marginalized surrounding communities” (Walpole and Goodwin, 2000; P. 560). However, critics have expressed the view that tourism merely perpetuates existing inequalities between consumers and hosts suggesting that economic capital and control are frequently generated from outside sources resulting in leakages, external dependency, and an unequal distribution of benefits and costs (Walpole and Goodwin, 2000).

At national level, the processes may be repeated with a polarisation between the metropolitan core and the rural periphery, with the latter marginalized by their geographic remoteness and hence lack of interaction with the market (Walpole and Goodwin, 2000). Within rural locales, core-periphery relations may exist as a result of the appropriation of benefits by a few at the expense of the majority who bear most of the costs (Walpole and Goodwin, 2000). “The extent to which equitable local benefits from tourism can be realized largely depends upon the ability of the host population to minimize such risks” (Walpole and Goodwin, 2000; P. 560).

Tourism is a tertiary business which relies on secondary businesses such as manufacturing industries for the supply of processed and packaged retail goods, and for much of its infrastructure. Tourism developments where fishing and farming (primary industries) are dominant without the development of intermediate secondary sectors lack
the linkages between primary and tertiary (tourism businesses) resulting in leakages. The problem is exacerbated by the tendency towards enclave developments, such as, the cruise ship sector of the market in Komodo National Park in Indonesia where passengers are almost completely isolated from the local economy in a self-sufficient exclusive environment, which denies local people the opportunity to benefit (Walpole and Goodwin, 2000).

This may be true for externally organized package tours to protected areas, a situation whereby tourist spending contributes the least to the local economy. The local communities within or just outside protected areas may be marginalized from any participation in the distribution of benefits from tourism. For this to change, local communities within or just outside protected areas “...need to be more fully integrated into the process of protected area management, and given the opportunities to participate in tourism development in ways which they themselves decide are appropriate” (Walpole and Goodwin, 2000; P. 573).

3.2.1 Tourism and the economy of periphery areas

Regional governments may perceive tourism industries as a mean of economic development in peripheral areas through opportunities for job creation and inflow of capital (Keller, 1987). However, if tourism is not well planned, it has the potential to perpetuate existing inequalities between peripheral and developed centres. Some examples are illustrated below.

Tourism, as with any other industries, may be managed, organised and controlled by people from industrialised developed centres resulting in centre-periphery conflict and undesirable leakages from destination areas. “The economic benefits of tourism can be elusive. Large scale developments involving millions of dollars may appear to be contributing to local or regional economies, but in fact, such benefits may only be illusory” (Stankey, 1989; p.14). The rate of leakages of regional tourism expenditures can be very high. For example, in the Caribbean, estimated total leakages range from 50 to 65
per cent “... indicating that the interrelation between tourism and other sectors of the economy is very weak” (Wilkinson 1987; p. 135).

The benefits derived from increased employment opportunities in association with tourism in periphery areas can be elusive as high paying jobs often go to people from outside the area. For example, in Nepal’s Chitwan National Park, people from elsewhere or even from outside Nepal took the higher paying jobs (Mishra, 1984). Skilled labour from outside may perceive employment in peripheral areas as a means of making a fast buck for a limited time period and may remove their savings from the local economy when leaving, resulting in more leakages (Keller, 1987). In Canada’s Northwest Territories, few natives were involved in the tourism industry and where natives were employed, there was evidence of a yearly staff turnover of 300 per cent to 500 per cent (Keller, 1987). This huge turnover “... is attributed to the natives’ inability to keep schedules, and their lack of ability to offer a quality tourist product by meeting standards and expectations” (Keller, 1987; p. 30).

Tourism can cause inflation at peripheral areas. For example, between 1978 and 1981 in Nepal, the price of rice, vegetables, cooking oil, kerosene and other products increased more rapidly in tourist centres than in other areas (Mishra, 1984). This resulted in an inequitable allocation of costs with people living in the periphery areas absorbing the costs while non-locals received the benefits (Stankey, 1989). Furthermore, tourism may be highly seasonal and wages from tourism activities typically are low (Stankey, 1989) which further reduce economic benefits for local people in periphery areas.

3.3 SUSTAINABILITY OF TOURISM

The Burndtland Report stated that sustainability “... meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development [WCED], 1987, p.8). Currently the World Tourism Organisation (WTO, 2002) defines sustainable tourism development as:
Meet[ing] the needs of the present tourists and host regions while protecting and enhancing the opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems.

In rural societies, communal ownership has governed the sustainable use of public resources for centuries (Yu, Hendrickson and Castillo, 1997). However, rapid modernisation has caused the breaking down of communal resource sharing and policing leading to environmental degradation (Yu, Hendrickson and Castillo, 1997). Tourism is not going to stop and will continue growing and expanding. Yu, Hendrickson and Castillo (1997; p. 130) suggest “in theory, ecotourism creates a self-sustaining cycle of increased tourism, increased incomes, and incentives for habitat protection, which can include foregone hunting and farming”. In practice, the link is often questionable; the benefits from tourism are often unequally distributed and may not benefit the locals such as farmers and fishers (see for example; Yu, Hendrickson and Castillo, 1997; Walpole and Goodwin, 2000; 2001). The challenge for management is to be able to distribute the benefits from tourism to those who bear the greatest cost and are most likely to exploit the natural resources. For example, by entering into an agreement with local communities, Tambopata Jungle Lodge in Peru is effectively promoting the surrounding forest as communal ownership of a public resource. “The mutual policing and sharing of a resource, [and] … the communal agreement to forgo a resource (hunting and farming) in favour of another resource (the school), helps to solve the Tragedy of the Commons problem inherent in public resources” (Yu, Hendrickson and Castillo, 1997; p. 136).

As distribution of use is related to the distribution of impacts, use distribution is a major management concern for recreation resources managers. To be able to manage impacts on tourist areas, particularly in natural areas, it is crucial to identify and assess impact problems related to the key conservation values of the area (DOC, 1997). The New Zealand Department of Conservation (1997) defines conservation values as “… the specific elements of natural and historic resources which establish their significance for
being assigned conservation priority by management agencies” (p.7). Crucial to management is the point that any use of the area will have effects on the conditions and values associated with the area, that not all effects result in negative impacts, and that impacts do not occur in isolation (DOC, 1997; Hammit and Cole, 1998; Ioannides, 1995).

3.4 TOURISM IN DEVELOPING COUNTRIES

Tourism is often regarded as a ‘white’ industry and perceived to be a vital development agent and an ideal alternative to the traditional economic sectors. Many developing countries have considered it as a panacea for their economic malaise (Lea, 1988). It is seen as a means to generate foreign exchange earnings, inducing local economic growth, generating employment, improvement of infrastructure, improving the living standard of the local communities (Ioannides, 1995) and promote conservation of the natural attractions (Yu, Hendrickson and Castillo, 1997).

“Most governments of developing countries that promote tourism do so in order to earn more foreign exchange, to increase national income and employment, and, sometimes, to achieve regional development of backward areas” (De Kadt, 1979, p. 20). Developing nations rush in to develop tourism due to its perceived benefits as a development tool, and its positive contribution to the local and national economy. Income from international tourism in developing countries makes it a lucrative source of foreign exchange earnings and has helped in the balance of payments. Studies shows that international tourism grew faster in developing countries as tourists favour new destinations to take advantage of cheaper prices (Hall and Page, 1999).

In Southeast Asian countries, tourism has become one of the leading industries for generating foreign exchange earnings (Hitchcock et al., 1993; Dowling, 2000). In 1990, tourism was the leading source of foreign exchange in Thailand, second largest in the Philippines, third largest in Singapore and in Indonesia tourism has moved into fourth
place, outstripping rubber and coffee as an earner of foreign exchange (Hitchcock et al., 1993). Tourism will continue to increase in Southeast Asian nations with an increase in international arrival forecasts at 6.3 per cent per year from 1995 to 2020 (World Tourism Organisation [WTO], 1999b). The significant growth in tourism in developing nations has been associated with a number of factors and processes. Hitchcock et al. (1993; p.1 – p.3 paraphrased) suggest three major factors that contribute to this growth as:

Increase in people’s ability to afford to travel to the region, which may be attributed to raising levels of affluence in source areas and the steady falling of costs to travel to the destination.

The general shift in the ‘centre’ of gravity of mass tourism away from the long established destinations to the Far East and elsewhere as a result of over development in established centres.

The change in customers’ preferences, a search for something different with the natural and cultural environment placed high on tourists’ list of priorities and active campaigns by destination countries.

Realising the need to ensure sustainability of tourism, some governments of developing countries have adopted the concept of ecotourism as policy, focusing on conservation and benefits to local communities (see for example, Cater, 1993; Pipithvanichtham, 1997; Honey, 1999). However “… most ecotourism is now concentrated in national parks, wildlife reserves and similar types of protected areas [and] each of these protected area systems has environmental integrity goals” (Eagles, 1995; p.3). Pipithvanichtham (1997) suggests that most of the popular ecotourism destinations in Thailand are located within protected areas such as national park and wildlife sanctuaries. In Malaysia, forest areas, particularly within protected natural areas, are the most popular ecotourism destinations (Nor, 1992). Protected areas are often the nation’s natural heritage of significant ecological, biological and environmental values, which may be destroyed if policy, action or development of such areas are not carefully considered, conducted, and effectively managed (Pipithvanichtham, 1997).
3.4.1 Tourism in Malaysia

Tourism is a new emerging industry in Malaysia compared with neighbouring countries of Singapore and Thailand (Nor, 1992; Khalifah and Tahir, 1997). In the early 1970s, tourism was not a substantial sector of the Malaysian economy, however, “... it was seen to have huge potential in meeting the objectives of development and income levels, to foster regional development, to diversify the economic base and to increase government revenue” (Khalifah and Tahir, 1997; p. 177). Tourism was also seen as a tool to improve socio-cultural integration and a national sense of unity among the multi-ethnic populations of Malaysia. In the 1970’s, emphasis was on development of basic infrastructure to foster development of tourist sites and it was only in the 1980’s that incentives were given to the development of accommodation and manpower (Khalifah and Tahir, 1997). In 1987 with the establishment of the Ministry of Culture, Art and Tourism, Malaysia began an aggressive campaign to promote tourism at the international level with slogans such as ‘Visit Malaysia Year’ in 1990.

Today, the tourism industry in Malaysia has become the third largest industry after manufacturing and Palm oil. Vigorous marketing efforts, development of new and improved tourism products, improved infrastructure and rapid economic growth in East Asia have contributed to the rapid expansion in tourism arrivals to Malaysia. This has resulted in a significant increase in foreign exchange earnings with receipts from tourism growing at the rate of 14.64 per cent per annum during the period from 1980 to 1997, increasing from $US 265 million to $US 2,703 million (WTO, 1999a). In 2001, Malaysia recorded 12.8 million tourist arrivals, an increase of 25 per cent on arrivals in 2000 (WTO, 2003). The majority of international visitors to Malaysia are residents of Asian countries and most go to Peninsular Malaysia. In 1995, Malaysia recorded 7.5 million visitors of which 95 per cent visited Peninsular Malaysia, 88 per cent were residents of Asian countries with Singapore contributing the majority with 70 per cent (Smith, 2000).

Domestic tourism is increasingly important in Malaysia with an estimated growth of 15 per cent per year, an increase form 20.3 million in 1990 to 25 million in 1993 (Khalifah and Tahir, 1997). This trend is expected to continue as more Malaysians experience an
increase in standard of living due to its buoyant economy and a more even distribution of national income (Khalifah and Tahir, 1997). Domestic trips were mainly for business, visiting friends and relatives, and vacations.

The main selling point of Malaysia to the outside world is its diverse ethnic groups which are reflected in festivals, religious events, languages, architecture, cuisines and lifestyles (Musa, 2000). Natural areas such as beaches, islands and national parks are also major attraction in Malaysia, and nature-based tourism activities are the fastest growing tourism product (Musa, 2000). In Peninsular Malaysia, historical buildings and some modern buildings such as the Petronas Twin Towers (the tallest building in the world) are major tourist attractions.

There are contrasting differences in product development between Peninsular Malaysia and the East Malaysia states of Sabah and Sarawak. In Peninsular Malaysia, the large volume of arrivals allows for the development of facilities to attract mass tourism such as the MICE (Meetings, Incentives, Conventions and Expositions) markets (Musa, 2000). Low volumes of arrivals to Sabah and Sarawak coupled with a huge range of natural areas allow Sabah and Sarawak to concentrate on developing its nature and adventure products (Dowling, 2000).

Khalifah and Tahir (1997) suggest that the late entry of Malaysia into the tourism industry is a disadvantage when compared with neighbouring countries, but it is also a blessing in disguise since it can gain insights from the mistake of others. In 1995, the Prime Minister, Datuk Seri Dr Mahathir Mohamad said “Malaysia hopes the tourist industry will grow faster to achieve the target of one tourist per head of population by the year 2020” (New Straits Times, 1995, cited in Khalifah and Tahir, 1997; p.192). Emphasising tourist numbers alone is misleading, as they reveal nothing about the types of tourists and their behaviours which could have either positive or negative impacts at destinations.
3.4.2 Tourism in Sarawak

Sarawak is a small developing tourism destination in South East Asia. While it is a constituent state of Malaysia, because of its geographical isolation on the island of Borneo, Sarawak along with its sister state of Sabah, is in many ways developmentally distinct from the remaining states of Peninsular Malaysia (Simmons, 1996).

In 1993, of the total 6.5 million arrivals to Malaysia, Sarawak and Sabah account for only 3.2 per cent and 1.7 per cent respectively, and of the total tourism receipts of $US 1,950 million, Sarawak and Sabah account for 7.6 per cent and 3.5 per cent respectively (Cockerell, 1994). Sarawak has recorded an increasing number of foreign visitors arrivals from 1.0 million in 1995 to 1.4 million in 2000 (STB, 2003).

Sarawak is expected to play a central role in the development of Malaysian tourism. In contrast to the urban and coastal attractions of the peninsula, Sarawak has much to offer in its natural and cultural attractions. In line with the efforts by the National Government, Sarawak’s State government also put high priority on tourism development in the mid-1980s. Sarawak, with its multiracial society, wide range of wildlife and forest habitats particularly in protected natural areas, and wide range of natural features such as caves, rivers and mountains is promoted as an opportunity for ‘culture, adventure and nature’, usually referred to as ‘CAN’. Slogans such as ‘Land of the Hornbill’, ‘Land of Headhunters’, ‘Land of Many Rivers’ and ‘Land of the White Rajah’ used in promotion and brochures are indicative of culture, wildlife, natural beauty and history of Sarawak (Hon, 1990).

In 1992, the State together with the Federal Ministry of Culture Arts and Tourism commissioned the Second Sarawak Master plan to guide the orderly development of tourism. The conceptual framework for the preparation of the master plan stresses a multi-dimensional approach which sets Sarawak explicitly in the national context and that of the wider ASEAN region (Pearce, 1995). The plan recommended that Sarawak offer a myriad of tourism products ranging from cultural attractions (Kuching City, Sarawak Cultural Village, Longhouses, Niah Caves and the Penan Community), nature
based attractions (National Parks and Wildlife Sanctuaries), adventure activities, beach products, food and shopping and special events and festivals (Government of Sarawak [GOS], 1993a; 1993b).

The exotic images of Borneo such as longhouses, Dayak cultures, and wild tropical landscapes have become major attractions to entice tourists to Sarawak. Zeppel (1994) pointed out that tourist brochures mainly depict Iban longhouses, Dayak people wearing traditional costume, Borneo wildlife and spectacular scenery like Mulu caves or Niah caves, tropical rainforest, British colonial buildings, Chinese temples, handicrafts, river scenery and also the Sarawak Cultural Village.

3.4.3 Tourism and Iban communities

Most indigenous groups in Sarawak such as the Iban, Bidayuh, Kayan, Kenyah and Kelabit were longhouse dwellers with their own beliefs, cultures and customs. Today some communities still practice shifting rice cultivation and follow customary beliefs and practices based on longhouse living and animism (Hong, 1987).

Exotic images of Sarawak are based on the people and their cultures and tourist emphasis on seeing Dayak 'headhunters' and visiting Iban longhouses (see for example, Hon, 1989; Caslake, 1993; Abdul Rahman, 1989; Sulehan and Kari, 1989; Zeppel, 1993, 1994, 1995, 1996, 1997b and 1997c). Among the ethnic groups, the Iban are the major tourism product and are used extensively to promote Sarawak (Caslake, 1993). Organised tours to Iban longhouses are a major activity (Zeppel, 1993). The cultural attractions that appeal most to international tourists include the Dayak people themselves, ethnic artefacts and handicrafts, cultural heritage, the Sarawak Museum and historical buildings (Hon, 1989). Overnight visits to an Iban longhouse are the most popular activity choice among international tourists to Sarawak (Hon, 1989). Aspects of Iban culture such as festivals, traditional dance, trophy skulls, ceremonial costumes, 'ikat pua kumbu' textile, tattooed Iban men and their hospitality are featured prominently in tourist marketing of Sarawak as an exotic destination in Borneo (Zeppel, 1994).
Most of the longhouses visited are located in Skrang, Lemanak, Engkari and Ulu Batang Ai of the Betong Division\textsuperscript{11} of Sarawak (Zeppel, 1993). Iban longhouse tours are mainly conducted in the Betong Division as they are located within one day’s journey from Kuching and Iban living there still continue with their old longhouse lifestyle, follow their animistic religion and practice traditional customs (Kedit, 1980). Organised tour groups to Iban longhouses on the lower Skrang River began in the mid-1960s (Kedit, 1980). The commercialisation of Iban longhouses on the Skrang River and competition with established tour operators forced new operators to shift their tours to other longhouses (Hon, 1990), for example Borneo Transverse Tours took tourists to Serubah on the Lemanak River, while Borneo Adventure conducted longhouse tours at Nanga Sumpa on the Batang Ai River (Zeppel, 1994).

Many Iban longhouses communities in Sarawak have become deeply involved as tourism destinations with many members working part-time, performing various tourism-related activities, and tourism has become their major source of income (Yea and Noweg, 2000). Dowling (2000; p. 5) has hypothesised that “in Batang Ai, the development of ecotourism has created employment opportunities for the local villagers and has helped to reduce the hunting pressure on ... wildlife”. Participation in tourism activities is normally rotated among all families in the longhouse and every family “... is encouraged to participate when and where possible” (Sagging et al., 2000; p. 428). Jiheh (2001) in a study on the socio-economic impacts of longhouse tourism on local communities deduced that participation in tourism activities was fairly distributed among all households in the longhouse. They are often involved in welcoming, guiding, making and selling handicrafts, transporting, and helping in tourist lodges (Sagging et al., 2000). “Boat driving, boat navigating, dancing, playing musical instruments, making and selling handicrafts, and cooking and housekeeping” were the most important activities while activities which generated the most income were the most preferred (Jiheh, 2001; p.75).

At Ng. Stamang on the Engkari River, Zeppel (1997b; p. 7) observed that a “… new longhouse tourism arrangements illustrate the changing role of Iban host, from being ‘culture providers’ to overall ‘culture managers’”. However, Sagging et al. (2000; p. 438)

\textsuperscript{11} It was part of the Sri Aman Division prior to 2001. It was upgraded to divisional status in 2001.
suggests that local communities “are service and culture providers rather than ‘managers’”.

In many longhouses involved in tourism, Yea and Noweg (2000) suggests that increased income and leisure time for men contributes to problems related to alcoholism. They also suggest “... woman had to spend more time in agricultural work to compensate the lower availability of men to work on the farm” (p. 13). Women do not benefit as much as men from tourism, however, they cannot refuse to participate since loss of tourism-related income would negatively affect the entire longhouse (Yea and Noweg, 2000).

Tourist guesthouses were constructed at the most regularly visited longhouses; the first was built in 1976 on the Skrang River. Zeppel (1994) recorded eleven guesthouses built next to longhouses in the Skrang, Lemanak, Engkari and Batang Ai, all except one at Ng. Kesit, Lemenak were owned by the tour operators. In Batang Ai there are guesthouses built next to Wong Tibu, Ng. Bertik and Ng. Sumpa longhouses. Borneo Adventure constructed the guesthouse at Wong Tibu and at Ng. Sumpa, while Koperasi Serbeguna Batang Ai, a cooperative formed by the local communities within and adjacent to Batang Ai National Park, constructed the one at Ng. Bertik. Jihen (2001; p. 17) recorded that most of the guesthouses were under utilised and two, “one each in Menyang Kino and another at Wong Tibu are not used at all”. At the time of this research (2003), the guesthouse at Wong Tibu is in ruins and the one next to Ng. Bertik is in a very poor state of repair.

3.4.4 Tourism in Batang Ai

Travelling to Ulu Batang Ai prior to the construction of the hydroelectric dam at Wong Irup in 1985 took several days and was very difficult. The reservoir created by the dam reduced travel time to a few hours. Before 1986, tourism in Ulu Batang Ai was almost non-existent. Borneo Adventure, a tour company based in Kuching commenced tourism operations in Ulu Batang Ai in 1987 with the construction of a simple guesthouse next to
Rh. Along\textsuperscript{12} at Ng. Sumpa, Delok River. The establishment of Batang Ai National Park in 1991 gave added potential for the area as a tourist destination and Batang Ai was identified as one of the key development centres in the Second Tourism Master Plan (GOS 1993a; 1993b). The involvement of Ulu Ai longhouse communities in tourism starts and ends at the pickup point at Wong Irup. Much of the success of these developments is due to the initiatives of Borneo Adventure and their promotion of tourism in Ulu Batang Ai.

Hilton Batang Ai Longhouse Resort was constructed beside the reservoir in response to the State Government policy to promote tourism and recreational use of the reservoir and surrounding areas (Meredith, 1993). It was opened in 1995, and since then there has been a steady increase in tourism activities in the region, often incorporating a stay in the Hilton Longhouse Resort, a longhouse stay and a visit to Batang Ai National Park.

Borneo Adventure, a tour operation based in Kuching working with local communities in Delok a tributary of Batang Ai, and in Wong Tibu, constructed simple lodges for tourists next to the longhouses. Their product included nature and Iban culture. Borneo Adventure claims that their operation forges a holistic partnership between host and visitors who experience the local lifestyle on the host’s own terms and that the experience is neither intrusive nor undignified, benefiting hosts, visitors and local wildlife (Yong and Basiuk, 1998).

Borneo Adventure claims “... to provide the longhouse people with means of production ... which is compatible with their day-to-day lifestyle” based on mutual trust and respect (Yong and Basiuk, 1998; p.5). They also claim that “one of the initial difficulties that ... [they] faced was to combat “unrealistic expectations”, that tourism was going to be suddenly a major cash cow” (Yong, 2002; p.2). Initially, the longhouse community lacked capital so Borneo Adventure provided interest free loans to individual families to purchase outboard engines to enable them to ferry visitors. The individual family owns

\textsuperscript{12} Rh. Along is now called Rh. Ngumbang. Among Iban, the longhouse is named after the headman and the name of a longhouse changes when there is change in headman.
the engine, which implies responsibility and allows them to gain benefits from transportation of visitors.

A guesthouse built next to the longhouse belongs to Borneo Adventure, however the land belongs to the community so rental is paid in the form of ‘head tax’ of RM 10 for every visitor to the longhouse. This ‘head tax’ goes to the longhouse fund, managed by the longhouse Tourism Committee, for improvements to the longhouse, or welfare of its community. Borneo Adventure also set up an ‘education fund’ where they put aside ten Malaysian Ringgit (RM)\(^{13}\) for every visitor to the longhouse to help the community with basic education needs for their children.

Borneo Adventure also claims that the most tangible benefit to the community is an increase in income of about RM 6000 annually per family (Yong, 2002). Rh. Ngumbang at Ng. Sumpa with a population of 209 people received 995 visitors in 2000 earning a total of RM 153,000, an average of RM 5,000 per family (Antang, 2001). Income from transportation made up the bulk of the income amounting to RM 106,000, followed by sale of handicraft RM 28,000, other services (kitchen helper, guide and porter) RM 10,000, accommodation RM 8,000 and sale of local wine RM 1,000 (Antang, 2001). Jihen (2001) calculated a net annual income generated from tourism for the year 1997 to 2000 amounting to RM 78,600 in Ng. Sumpa, RM 1,800 in Ng. Beretik and RM 940 in Wong Tibu. The average number of tourists per year for the years 1997 to 2000 is 990 in Ng. Sumpa, 36 to Ng. Bertik and 60 to Wong Tibu. Of the 990 visitors to Ng. Sumpa, 690 were overnight visitors (Jihen, 2001). Zepel (1997b) observed that “...Iban hosts are moving from being ‘culture providers’ to ‘culture managers’...[and that] local entrepreneurs now play a key role in managing Iban longhouse tourism” (p.1).

On the conservation front, Borneo Adventure tipped the local guides accompanying the tourist well above their daily wages when an orang utan is sighted “... and this has assisted in the community realising that orang utans are a precious commodity, [which have] ... made them keen to protect the orang utan and to consider conserving the area as

\(^{13}\) RM 3.8 equals to one $US as at time of research.
wildlife sanctuary” (Yong, 2002; p. 5). For Ng. Sumpa to remain comfortable as a host and to maximise visitors’ experience, Borneo Adventure claims that the optimum number of visitors to Ng. Sumpa is 1000 per year (Jihen, 2001).

Batang Ai National Park does not provide any visitor accommodation and a majority of visitors to the park are day-trippers. They either stay in nearby longhouses or in the Hilton Longhouse Resort. Organised tours to the Delok River by Borneo Adventure do not incorporate a visit to Batang Ai National Park, as most of the recreational needs of visitors including nature walks and wildlife observation are available within the Delok area (Jonathan Dugat, per. Com., 2003). Accommodation at the Hilton Longhouse Resort includes visits to Iban longhouses and to Batang Ai National Park. Most visitors however prefer the longhouse tour and only the adventurous few visit the park (General Manager Hilton Longhouse Resort, Pers. Com., 2003). Batang Ai National Park has recorded a steady increase in numbers of visitors since it was officially open to the public in 1994. For the first five years it recorded increases from 60 visitors in 1995 to 447 visitors in 1999. After 1999, the number of visitors continued to increase, but at a lower rate. Numbers fluctuated up to 665 visitors but are very low in terms of national parks as destinations, representing 0.2 per cent of the total visitors to national parks in Sarawak. Direct revenue collected from visitor entrance fees to the Park in 2001 was RM 2,178 representing 0.15 per cent of the total revenue collected from visitors to national parks in Sarawak (FD, 2003). Low visitor numbers and low income from Batang Ai National Park compared with other parks in Sarawak consequently influences management attitude toward the park. Batang Ai National Park is often placed on a lower priority when it comes to budget allocation for development and conservation matters (Siali Aban, per. Com., 2003).

3.5 A CASE STUDY INVOLVING TOURISM AND LOCAL COMMUNITIES

Walpole and Goodwin (2000) in a study of the local economic impacts of dragon tourism in Indonesia employed small-scale surveying methods on businesses (supply side) and tourists (demand side). The areas of inquiry were “... the magnitude of tourism in local
communities; how tourism is affecting patterns of development in local communities; the type and magnitude of local employment generated by tourism; the magnitude of local revenue generated by tourism; revenue distribution within the local economy; and the level of leakage from the local economy” (Walpole and Goodwin, 2000; p.563). In their study, Walpole and Goodwin refer to ‘local economy’ as those of the village communities living within Komodo National Park and the immediate gateway towns.

The results of the study suggest, “... distributional inequalities favour external operators and urban gateway residents rather than rural villagers” (Walpole and Goodwin, 2000; p.559). Core-peripheral relations also exist at the local level, just as the local economy remains peripheral to regional and national economy (Walpole and Goodwin, 2000). Benefits for people living in Komodo National Park were even more limited with some villages receiving no tourists due to their isolation and inaccessible location (Walpole and Goodwin, 2000). Tourism generated a number of employment opportunities for local people however only seven per cent of the total was generated in the villages in the park (Walpole and Goodwin, 2000).

Walpole and Goodwin (2000) suggest that tourists spent approximately $0.6 to $1.6 million in 1995 / 1996 in the local communities surrounding Komodo National Park. However, 99 per cent was spent in the two gateway towns of Labuan Bajo (80 %) and Sape (19 %), and only one per cent accrued to people living within the park. Walpole and Goodwin (2000) also estimated that the percentages of leakages to tourist expenditure for the various businesses in the local area range from 25 per cent (accommodation) to 90 per cent (public transport). At least 50 per cent of tourist expenditure leaked from the local economy as a result of imported goods and services. Furthermore, expenditure from cruise-ship tourists visiting Komodo National Park, estimated at $5 to $6 million in 1995 to 1996 fails to pass through the local economy, and if this was taken into consideration, the total leakages out of the local economy is estimated to be 80 per cent (Walpole and Goodwin, 2000).
In summary, Walpole and Goodwin (2000; p. 573) suggested, "... while tourism in ... [Komodo National Park] clearly generates some limited benefits in the surrounding local economy, the village communities within the park have been marginalized from any participation in the distribution of such benefits". For tourism to be effective as a conservation and rural development tool, it should benefit those who are most likely to exploit the natural resources as well as those affected by the protected area (Stankey, 1989). Thus tourism in Komodo National Park fails in this respect. For this to change, Walpole and Goodwin (2000; p.573) recommended that the "... village communities within the park need to be more fully integrated into the process of protected area management, and given the opportunities to participate in tourism development in ways which they themselves decide are appropriate".

3.6 SUMMARY OF CHAPTER

The literature above provides an overview of tourism, its importance in the world economy, the factors that contribute to the growth of tourism, and the shift in demand towards adventure travel and nature based tourism. Adventure tourism including ecotourism -- tourism that should promote conservation, has low impact, and allows active involvement of and benefits to local people is the fastest growing segment of tourism (Ceballos-Lascurain, 1991). Improved infrastructure, marketing, and the pricing and packaging of tourism products has accelerated the expansion of tourism, reaching the most isolated areas of the world such as this study site in the remote interior of Borneo. However, tourism expansion brings with it impacts on the local communities and on the environment at destinations. Thus the literature describes how a destination is affected in the concept of 'tourist destination life cycle' as postulated by Butler (1980), and local communities response to tourism as in the 'irritation index' postulated by Doxey (1975).

On the one hand, tourism provides benefits to local communities while on the other hand, tourism has the potential to inflict detrimental impacts on host communities (Hall, 1991). Tourism can weaken traditional norms among rural communities; destroy intimate friendly relations by turning acts of spontaneous hospitality into commercial transactions.
Tourism also has the potential to damage the very resources on which it thrives and in certain areas, degradation of the environment has brought about a decline in the growth of tourism (OEDC, 1980). For tourism to continue to provide benefits, it is important that it is sustainable.

Tourism brings economic benefits to the country, regions or community, but like any other industry has the potential to be controlled by people from the more developed centres leaving the local people with few benefits and no incentives to protect the resources on which tourism thrives (Keller, 1987). Local people are often deprived of the opportunity to participate and receive very little benefits from tourism (Yu, Hendrickson and Castillo, 1997). A case study of economic impacts of tourism on local communities in Komodo National Park, Indonesia illustrates the failure of tourism to deliver major benefit to local communities. This case study shares similarities with the Batang Ai National Park study site in that both are located in remote locations in developing countries and have local communities living in the park.

The literature reviewed then traced tourism in developing countries with a focus on Malaysia. Governments of developing nations vigorously promote tourism as they see it as a panacea for economic ills, particularly for the development of rural areas (de Kadt, 1979). Sarawak is no exception in its drive to present nature, culture and adventure products (GOS, 1993a; 1993b). Tourism promotion and packaging in Sarawak is thus focused on its people and their culture (Hon, 1990), it's natural areas and adventure opportunities which are mostly located in protected areas (WCS and FD, 1996). The Iban communities have been extensively promoted for their unique way of life and culture (Caslake, 1993) and organised tours to Iban longhouses are a major product (Zeppel, 1993). My review then traces tourism to Ulu Batang Ai with emphasis on the initiatives by Borneo Adventure in providing the longhouse people with a means of benefiting from tourism compatible with their routine daily lifestyle (Yong and Basiuk, 1998). Longhouse communities benefit from tourism by providing transport and other services as well as through sale of handicrafts, increasing household income by RM 6,000 per year (Yong, 2002). The total number of visitors to Batang Ai National Park is low as most organised
tours do not incorporate a visit to the park because the recreational needs of most visitors are available outside the park (Jonathan Dugat, per. Com, 2003). Low visitor numbers has implications for management as it places Batang Ai national Park on a lower priority for development and conservation budget in favour of other parks that have higher visitation.

Relevant to the research question is that Sarawak’s culture, nature and adventure attractions depend on the goodwill of the local communities as well as the maintenance of good natural environments. The acceptance and cooperation of the local communities must be a key component in ensuring sustainable tourism, as they are most likely to be affected by the presence of tourists (Hamit, 2003). If local communities participate and benefit from tourism they will continue to provide favourable environments for tourism. The question is, does tourism benefit the local communities in Ulu Batang Ai sufficiently for them to continue to cooperate in providing a favourable cultural environment and to enhance the protection of the natural environment to ensure sustainability of tourism in the area?

It has been ten years since the Second Tourism Master Plan was commissioned. The Master plan outlined the institutional, marketing, transport and key development plans for the State. The seven key development areas in Sarawak with significant tourism potential outlined in the master plan include Limbang, Miri, Gunung Mulu National Park, Niah, Batang Ai (the study area), Kuching and Lundu/Sematan. This study in Batang Ai will also provide some insights to what has actually happened 10 years after the commissioning of the Second Tourism Master Plan.
CHAPTER FOUR
RESEARCH SITE; BATANG AI NATIONAL PARK, SARAWAK

4.0 INTRODUCTION

The aim of this chapter is to provide some background on the research site. A brief overview of Sarawak is presented first followed by information on the Betong Division and Lubok Antu District. Emphasis is placed on the historical background of Ulu Batang Ai and the role played by the local communities in traditional resources management. The chapter further discusses the changing trends in community resources management resulting from changes in socio-economic conditions brought about by technological innovation and commercialisation. The discussion includes descriptions of traditional land uses and resource utilisation and how these influence conservation in the area. It also discusses the introduction of tourism into the area and the expectations of local communities for benefits from the establishment of Batang Ai National Park.

4.1 SARAWAK

Sarawak is one of 13 states in Malaysia. Located on the island of Borneo, Sarawak is separated from Peninsula Malaysia by the South China Sea, and directly adjoins the State of Sabah to the northeast where the sultanate of Brunei forms a double enclave. Inland, the State borders Kalimantan, Indonesia (Fig. 1). Sarawak is the largest State in Malaysia with an area of approximately 124,449 sq. km, which accounts for about 37.5 percent of the land area of Malaysia. However, Sarawak has a relatively low total population of approximately two million people (Sarawak Health Department, 2003).

Administratively, Sarawak is divided into eleven divisions. These are Kuching, Sri Aman, Miri, Limbang, Sarakei, Sibu, Kapit, Samarahan, Bintulu, Mukah and Betong. A Resident heads the administration of each division, which may be further divided into two to four districts. A District Officer heads the administration of each district and reports to the Resident. Some districts cover large areas and are further divided into sub-
districts administered by an Administrative Officer who reports to the District Officer. The village or *kampong* is the smallest administrative unit. In each of these a headman locally known as *ketua kampong* or *tuai rumah*, depending on the community, heads each village. A Village Security Council or *Ahli jawatan kuasa keselamatan kampong* assists the *tuai rumah* on matters pertaining to the administration of the village.

Sarawak is developing rapidly, "even the more rural areas are now accessible through improved river transport, rural flights, logging and other roads, and are now joining the cash economy" (WCS & FD, 1996; p.3). This improved access provides enormous benefits to the people of Sarawak, however, such rapid changes have severe effects on wildlife and their habitats, and in recent years populations of many species have declined rapidly (WCS & FD, 1996).

Wildlife is of huge importance to the people of Sarawak. It is an integral part of their rich and diverse culture, and animals are the foundations of legends, of traditional belief, of arts and culture (Ahmad, et al., 1999). Wildlife is also an important source of wild meat for rural communities as well as for its role in maintaining the health of the forest (See Redford, 1992; Robinson and Redford, 1994; Robinson, Redford and Bennett, 1999; Bennett, 2002; McGowan, 2002). As a tourism attraction, wildlife provides economic benefits particularly to rural areas (WCS & FD, 1996). For wildlife to continue to provide all the above benefits in perpetuity, Sarawak needs to conserve and protect its wildlife and its habitats. Accordingly, Sarawak has put aside a range of habitats under full protection of the law as protected areas (Morshidi and Gumal, 1995).
4.2 BETONG DIVISION

The Betong Division in which my study area is located is a sparsely populated, mainly rural area. "Small market towns such as Lubok Antu have grown up along the main rivers to serve the needs of the rural people" (Meredith, 1993a; p.13). The main administrative offices, secondary schools and medical services are concentrated in such towns. "The main trunk road follows higher ground, by-passing the older towns, and newer settlements such as Skrang are located along the road" (Meredith, 1993a; p.13). Bus services link Wong Irup, the site of the hydroelectric dam in Batang Ai with Lubok Antu, Betong, Engkilili, Sri Aman and other major towns in Sarawak.

The economy of the region is based on agriculture with most rural families growing rice for their own consumption with some farmers growing pepper and cocoa (Meredith,
1993a). The Sarawak Land Consolidation and Development Authority (SALCRA) manage the rubber and oil palm estates in the region, producing rubber and oil palm products (Meredith, 1993a; Arman, 1997). Some logging activity is also carried out in the region though it "... is less important than in other parts of Sarawak ... [as more] land is devoted to agriculture" (Meredith, 1993a; p.13).

Manufacturing is "... virtually absent from the Division, though the hydroelectric scheme at Batang Ai generates a large proportion of the power needs" for the State (Meredith, 1993a; p. 13). Prior to 1986, the only centre for tourism in the region was the Skrang River where large numbers of foreign tourists visited the longhouses and stayed overnight in simple lodges (Meredith, 1993a). This gradually spread to the Lemanak River, Engkari River and Batang Ai, as transportation in the region improved and tour operators sought new destinations for their tours.

4.3 LUBOK ANTU DISTRICT

Lubok Antu District covers an area of 2,338 square kilometres with a population of 26,400 people based on the 2001 census (Government of Sarawak [GOS], 2002). The Iban constitute more that 85 per cent of the District’s population and while the majority are still living in longhouses, a few families have built detached dwellings next to the longhouses (Ngo, 1997).

Two of the prominent features of the district are the Batang Ai National Park (BANP) and the Batang Ai Hydroelectric Project (Fig. 2). The BANP gazetted in 1991 covers an area of 24,040 ha. BANP provides an extension to the adjacent Lanjak-Entimau Wildlife Sanctuary in Sarawak and the Betung-Kerihun National Park in Indonesia, and is the watershed for the Sarawak Electricity Company (SESCO) hydroelectric dam, which began operation in 1985. It has one of the largest populations of orang utans (*Pongo pygmaeus*) in the state (Gumal, 1995; NPWO, 1984; WCS&FD, 1996). The area is mostly covered by regenerating, old secondary forest (NPWO, 1984; Meredith, 1993a; Meredith, 1993b).
The Batang Ai Hydroelectric Project produced an 8,500 ha reservoir with a water level more than 60 metres above the original river level. It forced 26 longhouses to be moved out of the reservoir area to the Resettlement Scheme at Lubok Antu (Ayob and Yaakob, 1991).
Figure 2: Location of Batang Ai National Park among other Protected Areas of Sarawak

(own data over map supplied by Sarawak Forest Department)
4.4 ETHNIC PROFILES

Oral histories and genealogies of the Iban show that they originally came from the Ketungau tributary of the Kapuas basin of West Kalimantan before they entered the territory of modern Sarawak displacing Penan and Bukitan\(^\text{14}\) (Padoch, 1984; Jabu, 1989; Sutlive, 1989; Ngo, 1997). Their migration began in the middle of the sixteenth century from the Kapuas drainage into the Batang Lupar drainage, with the first group settling on the Undup River and from there “... the pioneers migrated up north, east, and west, occupying all the major rivers in what is now Sarawak’s Second Division, and some downriver of the First Division” (Ngo, 1997; p.156).

Intense warfare, the lack of desirable farming land, lack of fish and wild game, or crop failure are major factors which determined the Iban’s movement. In Batang Ai, “...this warfare existed, either among local Iban groups, or between independent Iban of upper Batang Ai and the Iban from lower Batang Ai who were forced upriver by Brooke’s\(^\text{15}\) punitive expeditions beginning at the middle of the nineteenth century” (Ngo, 1997; p.157).

During an armed confrontation with Indonesia from 1963 to 1967, the state government resettled eight longhouses from Upper Batang Ai downriver, closer to the nearby town of Betong, where they would allegedly be less vulnerable to attack by hostile forces (Meredith, 1993a; Ngo, 1997). In 1985, twenty-six longhouses affected by the construction of the Batang Ai Hydroelectric dam project were resettled at the Batang Ai Resettlement Scheme near Lubok Antu (Ayob and Yaakob, 1991).

However, in 1990 some members of seven of the longhouses returned to their former lands where they have rebuilt longhouses along the river, and continue to practice shifting cultivation of hill rice, cultivate vegetables, fruits, and the cash crops of rubber and pepper, and hunt, fish, and gather forest products (Ayob and Yaakob, 1991).

\(^{14}\) Penan and Bukitan are nomadic hunters and gatherers of the Sarawak forest. They built temporary shelters and move when the resources in the area have been exhausted.

\(^{15}\) Brooke government: The white rulers of Sarawak from 1841 to 1941.
"One of the primary reasons ... for returning to their former longhouse sites from the resettlement area is the ease of access to land, materials, and foods from the forest upriver as opposed to the difficulty in obtaining subsistence goods in a cash economy” (Horowitz, 1998; p.375).

4.4.1 The Iban Community

The Iban community is the largest ethnic group in the state of Sarawak, making up 28 per cent of the state’s population. The basic unit of Iban society is the nuclear family, averaging five or six members to a household and referred to as a bilik (Kedit, 1989; Osman, 1989; Freeman, 1992; Sutlive, 1992; Crand and Wills, 1998; Horowitz, 1998). A community or village may be comprised of five to 50 bilik residing in a longhouse and each longhouse has a headman or tuai rumah. Each “... longhouse community is an independent political unit occupying a discrete territory of up to 10 to 15 square kilometres, though there are close links between neighbouring longhouses within a river system” (Cramb and Wills, 1988; p. 6).

The position of the tuai rumah is normally handed down from father to son or to a close relative. However his acceptance or rejection depends on the consensus of the community arrived at through a group meeting called an aum, where both male and female of each household have equal rights to participate (Buma, 1992; Crand and Wills, 1998; Horowitz, 1998). While the authority of the headman over his followers is limited, “... an elaborate body of legal and ritual norms and conventions, termed adat rumah or longhouse custom, guide and constrain the behaviour of community members, as well as contributing to the cohesion of the wider Iban society within the river system” (Cramb and Wills, 1988; p 6). This voluntary association within an adat community of otherwise autonomous bilik constitutes the basic structure of Iban society and the preservation of the adat community is the ultimate Iban value (Kedit, 1989; Osman, 1989; Buma, 1992; Cramb and Wills, 1998).

The adat is aimed at reducing violence and maintaining peaceful relationships within and between communities. The tuai rumah of the longhouse is normally knowledgeable on
the adat and is responsible for enforcing it (Buma, 1992). While the Iban adat has in recent times been standardised, codified and published, the punishment for breaches is still at the discretion of the headman (Horowitz, 1998).

The Iban also continue to be the poorest ethnic group in terms of educational indicators like school attendance, attainment and literacy, income and assets (Ko, 1980; Berma; 2000). In 1997, the Iban made up half of Sarawak's 7.5 per cent of 'poor' or 'hard-core poor' -- households earning less than RM 515 per month, the poverty line in Malaysia (Berma, 2000). The average monthly income of the hard-core poor was RM 158, the poor was RM 403 and the non-poor was RM 904 per month (Berma, 2000). Among the Iban, the high poverty rate can be linked to their low levels of educational achievement as "... 78.1 percent of total Iban do not have any school certificate" (Berma, 2000; p. 491). Berma also suggests "since education is one of the main determinants of income, it is clear that the income-earning capacity in terms of human capital is very low for the majority of Iban" (p. 491). Low incomes among Iban were related to their economic activities with the majority of the poor and hard-core poor being rice farmers (Berma, 2000). Another aspect of poverty is lack of ownership of physical assets such as a house or agricultural land. Through traditional practice, the majority of Iban do not own physical assets individually. They are shared with other bilik-family members or are the property of the community, thus, are unavailable for use as insurance against risk or mortgage (Burma, 2000).

4.4.2 Traditional Iban methods of resource management

"The Iban, living in the world of trees, animals, insects and thousands of other living things in the closed system which characterises tropical rain forest ecology, shared the strange environment of jungle-life with non-human organisms. In their daily life within this environment the Iban inevitably view and interpret their existence in accordance with local experience. Life to the Iban is a continual process of interaction between all beings, whether natural or supernatural" (Kedit, 1993; p.15).
Traditionally the Iban rely on forest products for a variety of uses such as food, raw materials and medicines, and they have tailored their resources management according to their availability (Horowitz, 1998). The management of resources is also governed by customary law (*adat*) (Lembat, 1989; Sather, 1989).

Traditionally, the *adat* are rarely broken for fear of divine retribution as they believe that wrongdoing (breaking of a taboo) may result in undesirable events (Lembat, 1989). It is also in everybody’s interest to maintain good relations with neighbours so members voluntarily curtail free-rider tendencies due to shared morality and a concern for the survival of the group (Cramb and Wills, 1998; Horowitz, 1998). Self-monitoring by the community reduces the need for enforcement by any person of authority and provides an effective means of reducing conflict. For example, among the seven longhouses in Batang Ai, Horowitz (1998) documented only one longhouse leader who recalled having fined a person eight *mungkul* (a unit of fines) for farming without permission in an incident that occurred before the Japanese occupation of 1942 – 1945.

The longhouse territory includes farms (*umai*), gardens (*kebun*), fruit trees (*buah*), a cemetery (*pendam*), forest (*utan*), and the stretch of river running through it (*tegeran ai*) which are marked by natural landmarks such as hills, mountains or rivers, or plants such as large clumps of bamboo or big trees. Longhouse elders pass this information from generation to generation and if a longhouse splits, both communities may retain rights to the area which becomes shared.

### 4.4.2.1 Farmland

All members of the longhouse jointly own the area of potential farmland and have the right to clear uncut forest within their territory for farming. Once the forest has been farmed, the rights over the area belong exclusively to the household and the descendents of the family (Horowitz, 1998). The right to clear forest within a longhouse territory is also exclusive to the members of the longhouse community (Crumb and Wills, 1998). However these rights do not constitute permanent rights, or the ability to sell the land and
when a plot is not being cultivated, all longhouse members have access to it for hunting and collecting forest products.

In the Batang Ai area, Horowitz (1998) reported that outsiders may temporarily borrow land to farm free of charge and outsiders may enter fallow land to hunt, fish, or gather forest products with the permission from the headman of the longhouse.

In most Iban communities, “when a member of the community leaves to marry someone from outside the longhouse or to seek wage employment somewhere, the tuai rumah may reallocate the plot that he or she used by granting it to another community member ... however, in the Batang Ai area, individuals who move out of the longhouse normally retain farming privileges” (Horowitz, 1998; p.378). In Batang Ai Horowitz (1998) also documented that the longhouse community normally welcome back people with inherited rights to land within the longhouse territory, if they wish to return permanently to farm.

Traditionally the longhouse community moves to a new location when the land becomes exhausted after being farmed for an extensive period of time, however, they retain rights to the site known as a tembawai. The former residents continue to maintain the fruit trees planted during the time the longhouse was inhabited and these areas become important forest orchards that also attract frugivorous wildlife (Horowitz, 1998). These lands are not allowed to be cultivated until the fruit trees have been overtaken by the regrowth of mature secondary forest (Sather, 1990). The presence of fruit trees in an area also informs outsiders that it is already claimed by a longhouse.

4.4.2.2 Traditional Resource Conservation

Within the longhouse territory, not all of the forest is made available for farming. Certain communally owned areas or pulau are especially reserved and serve as reservoirs for wild animals, trees, and plants for exclusive use by the longhouse community. Care must be taken to ensure that these areas are not burned during annual farmland clearance.
In Batang Ai, Horowitz (1998) documented evidence of resource conservation and appropriate responses to resource abundance in the sense that when the upriver longhouses were built in the 1980s, the population densities were low in relation to the extent of forest available as many people chose to remain at the resettlement schemes close to town and this situation has led to the lifting of certain restrictions. Outsiders with kinship ties are often allowed, with permission from the headman, to hunt or gather forest products but are not allowed to cut large trees from the longhouse pulau (Horowitz, 1998).

Forest areas where an individual has had a spiritual encounter are treated as sacred and are reserved as pulau pesaka or heirlooms by the individual households. A Pulau pesaka is owned by the individual’s household and is passed on to his or her descendants who co-own the area. It is illegal to farm, burn or cut trees in pulau pesaka, although outsiders may hunt and gather certain forest produce within these areas if they ask permission from the owners. Heavy fines are imposed on households that cause damage to these areas. Horowitz (1998) pointed out that in Batang Ai, one longhouse leader cited a fine of RM 60 for allowing fire to spread into pulau pesaka or for cutting one tree within it. Pulau pesaka have greater conservation value than the communally owned pulau, as trees cannot be felled from these areas.

Other areas that are normally left uncut include the burial sites of leaders or heroes (tanah ulit) and communal cemeteries (pendam) (Horowitz, 1998). To the Iban, these regulations were meant to restrict resource exploitation for the benefit of the longhouse community. In addition, albeit indirectly, they serve to conserve areas of forest, provide habitat for wildlife and act as a genetic reservoir for the surrounding areas.

An individual may reserve (kelai) wild fruit trees, trees for timber or other forest products within a pulau by using a sign known as pesindang where the trunk of the tree is slightly cut and one or two pieces of wood are inserted cross-wise. Taking the fruit or timber of trees which have been reserved without permission from the owner is an offence and could lead to fines. In Batang Ai, this practice is recognised as valid but people do not
currently reserve trees and "... apparently, the abandonment of this practice is a response to resource abundance; pesindang were used in the past when more people lived in the area" (Horowitz, 1998; p. 380).

4.4.2.3 Wildlife Species Protected

Religious beliefs among Iban requires that certain species of plants and animals must be protected. This may also have positive spin-offs for conservation. For instance, the prohibition of cutting of fig trees (Ficus spp.), which are thought to be the home of spirits, also conserves very important food trees for wildlife (Horowitz, 1998). Ensurai (Dipterocarpus oblongifolius) found growing along the riverbank where their fruit is food for fish and their roots protect riverbanks from erosion are also not to be cut. Horowitz (1998) also documented certain plants such as selukai (Goniothalamus dolichophyllus, G. malaynus) and tungkat ali (Eurycoma longifolia) which are reserved for medicinal purposes and cannot be felled and some other plants considered as taboo (mali) plants by some families are not to be cut by members of that family.

Some families also have certain taboo (mali) over the killing of certain types of animals known as tua, which they believe to be their dead ancestors in animal form returning to help them. All the households of the seven longhouses that have privileges over Batang Ai National park regarded the orang utan (Pongo pygmaeus) as their tua species (Horowitz, 1998).

Horowitz (1998; p.381) also recorded that "...the gibbon (Hylobates spp.) was the second most common tua; next was the barking deer (Muntiacus muntjak), followed by the crocodile (Crocodilus porosus), the Brahminy kite (Haliastur indus), the python (Phyton spp.), and an unidentified snake known as ular belalang. The great Argus pheasant (Argusianus argus) was a tua for the majority of households at one longhouse, and the grackle or talking myna (Gracula religiosa) at another".

The Iban people considered seven species of birds to be omen birds and these are often referred to as the sons-in-law of Singalang Burong, "... the high-god of the Iban augury"
These birds are believed to help people by providing warnings in the form of songs and flight patterns and must not be harmed. Farming is prohibited in areas known to be breeding grounds of these birds. If someone cutting an area for farming discovers that it is a breeding ground of one of the birds, he or she should leave the whole area uncut, however some individuals only leave a smaller area of about 100 square feet around the nest (Horowitz, 1998).

4.5 SOCIOECONOMIC CHANGES

Traditional Iban resource management systems have been successful in providing orderly access to resources for community members with minimal recourse to enforcement (Cramb and Wills 1998; Horowitz, 1998). These systems have functioned adequately in a traditional social, economic, and technological context but the old regulatory system is no longer adequate to address the current situation as societies including Iban experience the rapid changes occurring throughout Sarawak (Horowitz, 1998). The breaking down of traditional authority structures and loss of community cohesion, rapid technological advances and increasing participation in the cash economy have resulted in over-exploitation of land and forest resources (Horowitz, 1998).

4.5.1 Loss of Social Organisation

Bejalai or travel for temporary employment has always been an important stage in an Iban young man’s life. However more are now remaining for longer periods or even permanently in distant towns (Kedit, 1993). Many families also choose to move to urban areas where they have health care and education for their children. This results in lack of understanding of adat and rights of access, as well as information about boundaries, all of which young people once learned informally from longhouse elders. Being able to earn an income gave them the ability to support themselves and not rely on the cooperation of fellow community members for survival. Thus in some areas people “... may be less inhibited about exploiting communal resources for personal profit, for instance, selling inherited but unfarmed land to timber companies” (Horowitz, 1998; p. 383).
With the spread of Christianity, people disregarded ritual prohibitions as they were no longer afraid of retribution from the spirit world and in recent years there has been a gradual increase in the number of households that have converted to Christianity in Batang Ai (Horowitz, 1998). Furthermore, as young people are influenced by new ideas, they lose their respect for customary law and traditional religious beliefs. As Iban communities break apart, knowledge about resource management is being lost and social pressures are losing influence on attitudes toward use of resources.

4.5.2 Technological Changes and Commercialisation

In most part of Sarawak, technological innovations are replacing the traditional methods; for hunting, guns are replacing dogs and spears; powered longboats are replacing the paddle power dugout; chainsaws are replacing axes; herbicides are replacing traditional manual weeding methods, to name some (Hong, 1987). In Batang Ai, motorised longboats dramatically cut travelling time which once took weeks to a matter of hours. Chainsaws are now replacing the traditional use of axes for felling forest for farmland even in interior areas, and herbicides are replacing the need for manual weeding, making it possible for a few people to work what once required the whole family (Arman, 1997). Each of these technologies has allowed more time for other activities.

The traditional hunting methods using dogs and spears are disappearing in most parts of Sarawak, being replaced by shotguns, which allow larger number of people to hunt as it requires much lower levels of skill compared with the traditional methods (Bennett et al., 2000). Traditional hunters using dogs are easily detected because of the barking of dogs which serves to restrict the movement of hunters within their own territory, but with guns, hunters can trespass without being detected (Horowitz, 1998). The availability of batteries and torch light has made it possible for more people to go night hunting and the network of logging roads coupled with modern means of transportation has made even the most remote areas accessible to hunters from town areas. It also provides easy means to transport wild meat to trade in major towns and cities (WCS&FD, 1996).
In Batang Ai there is also evidence that traditional fishing methods are being replaced by the more destructive methods of poison or using generators for electrification of fish, both of which are devastating fish populations (Horowitz, 1998; Meredith, 1993a). Rural communities are no longer able to prevent outsiders from entering what was once exclusive to their community (Horowitz, 1998). Wildlife has become a “commons” -- an open resource-- and with this perception that ‘if I do not take it other people will’, the local people are joining in the race to exploit the common resources for personal gain without regard to the traditional ways or adat (Caldecott, 1988). Improved transportation means easy access between rural areas and markets, leading to increased commercialisation of resources that once were mainly used within the community. For example, a study by Bennett et al., (1995) recorded that wild meat was sold widely in markets and restaurants throughout the whole of northern Borneo, a resource which prior to 1980 was almost non-existent even in a large city like Kuching (WCS&FD, 1996). Any increase in commercialisation of natural resources, particularly wildlife, has been detrimental to the environment.

In summary, for hundreds of years, the Iban have been practising shifting agriculture and hunting and gathering but, given their low-level technology, the effect was minimal. By the 1980s, technological advances had allowed the timber industry to spread through much of interior Sarawak and “rural people had access to outboard motors and logging roads, which facilitated travel, and chainsaws, which enable them to clear larger areas of forest for cultivation” (Bennett and Dahaban, 1995; p. 66).

4.5.3 Resettlement Scheme
The resettlement schemes involving the Iban in Batang Ai began in 1964, “... designed to remove Ibans in particular from the border areas of Sarawak in the context of Indonesia’s policy of confrontation against Malaysia and the infiltration of Indonesia military personnel into Sarawak from Kalimantan” (King and Jawan, 1992; p. 145). A number of longhouses were resettled in rubber plantation schemes in Skrang nearer to the town of
Betong for security reasons. Today two longhouse communities; Rh. Rumpang of Ng. Jingin, Skrang and Rh. Betok of Lubok Numpu, Skrang continue to exercise their rights over land and resources in Ulu Ai. Some areas now fall within the Batang Ai National Park. Their claims however are recognised and honoured by their cousins living in Ulu Ai.

The second resettlement scheme involving Iban of Batang Ai was in 1980. Following the construction of the hydroelectric dam at Wong Irup and the flooding of 8,500 ha of land, 26 longhouses communities were re-settled (Hong, 1987; Ayob and Yaakob, 1991; King and Jawan, 1992; Arman, 1997).

King and Jawan (1992; p.146) suggested that all these schemes “... involve an element of compulsion [where] the desire to move has not come initially from the Ibans themselves but direction has come from above, from the government”. These were met with local resistance as the locals feared losing everything they owned but would consider resettlement if they were adequately compensated (Ayob and Yaakob, 1997).

The Iban of Batang Ai have been resettled against their freewill for reasons of national security and because they have stood in the way of a development project. Concentrating them in certain areas has placed pressure on the local environment because of the scarcity of farm land and supplies of jungle produce. The resettlement projects had not prepared the settlers for these changes in their life style (King and Jawan, 1992). Being unable to grow rice using traditional methods, or easily hunt and gather forest produce for their daily needs and hence, being unable to meet their financial commitments was “... a particularly traumatic situation for women” (King and Jawan, 1992; p. 165). “The resettled folks are unhappy that their pastime and lifestyles have to be drastically altered by development” (Ayob and Yaakob, 1997; p.281). However, they view favourably the social amenities and support services provided by the government including health facilities, children’s schooling, transport facilities, agricultural marketing, availability of agricultural courses, access to agrochemical inputs, electricity supply and water supply (Ayob and Yaakob, 1997).
King and Jawan (1992; p. 166) suggest that “almost all resettlement projects among the Iban have not properly prepared those resettled for the tremendous changes to which they have been subjected [and that] planners have not been sufficiently sensitive to the needs to preserve certain crucial Iban socio-cultural traditions”. Serious shortcoming have been the lack of alternative employment in the resettlement areas and planners’ failure to anticipate changes of attitudes among the settlers (King and Jawan, 1992).

The ease of access to land, materials, and food from the forests upriver as opposed to the difficulty in obtaining subsistence in the resettlement schemes are reasons for some families moving back to Ulu Ai (Meredith, 1993a). Those who chose to stay back nevertheless continue to exercise their rights over the areas which were once their homeland and this right is recognised by their cousins who now reside in longhouses upriver. As an example of this, the residents of Rh. Mujap in Ng. Bertik who were resettled through the Bertik Scheme, Lubok Antu as Rh. Ayum continue to maintain their old longhouse at Ng. Bertik and use it as a base for continuing their traditional practices of farming, hunting and gathering jungle produce.

4.5.4 Communities in Ulu Batang Ai

The people in Ulu Batang Ai, the study site, are Iban. They speak a Proto-Malay language and practise a traditional belief system of Hindu-Buddhism, Animism and Augury (Yong and Basiuk, 1998). The average family size is about six persons, however, about a third of those in the age group of 21 to 30 years were working in towns or other places, or have migrated away from their longhouse (Jihen, 2001). Forty per cent of families earn cash of less than RM 100 per month, forty per cent earn between RM 101 and RM 300, and only eight per cent earn above RM 500 per month (Jihen, 2001). Jihen also recorded that sixty per cent of heads of families do not have formal education, twenty-eight per cent attended primary school and only twelve per cent attended secondary education. They live in traditional longhouses comprising of five to thirty families living in separate living apartments or bilik and derive their livelihood from planting hill rice, collecting forest produce, fishing, hunting and small-scale rearing of livestock (Yong and Basiuk, 1998).
In the Ulu Batang Ai, rice farming "... has psychological importance for the community. Having an abundant stock of rice in the tibang (container made of tree bark) a family feels confident about food security" (Arman, 1997; p.176). An average family owns between two to five acres of rice field capable of producing between 1,600 and 2,500 kg of unhusked rice, equivalent to about 800 to 1,250 kg of rice (Arman, 1997). They are self-sufficient in terms of food and are able to obtain most of their daily requirements locally. However, they do not have "... a steady cash income, as the distance from Ulu Ai to the market makes cash crop farming and market gardening unfeasible" (Yong and Basiuk, 1998; p.1). Some families obtained some cash from growing pepper, rearing of fresh water fish, involvement in tourism related work, and occasional selling of wild meat¹⁶ (Nyaoi and Bennett, 2002). Some families also receive money sent to them by younger members who work for logging companies, in factories, on offshore oilrigs, or as labourers in towns (Arman, 1997; Nyaoi and Bennett, 2002).

In rural areas in Sarawak, alternative sources of cash and protein were not used to replace wild meat, as "... people will eat wild meat when it is there, and other forms of protein when it is not" (Bennett et al., 2000; p. 314). In Ulu Engkari, some longhouses had fishponds that produced large amounts of fresh fish, however, they sold all of the fish, and hunted for their meat requirements (Bennett et al., 2000). To the communities in Ulu Batang Ai, hunting "... is a form of recreation as well as a food-gathering activity" (Ayob and Yaakub, 1991; p.277). Wild pigs and deer are favourite game animals and before 1998, "these animals can often be seen displayed at the Lubok Antu bazaar during the hunting season" (Ayob and Yaakub, 1991; p.277).

After being exposed to better education and life in town, many young people do not want to return to the traditional way of life of farming, hunting, fishing and gathering (Arman, 1997). Some longhouses were left with few people, mainly of the older generations, resulting in some being no longer in good condition (Arman, 1997).

¹⁶ Sale of wild meat was legal prior to the total ban which came into force in 1998 as laid out in the Wild Life Protection Ordinance, 1998.
4.6 BATANG AI NATIONAL PARK

Batang Ai National Park is located in the Sri Aman Division of Sarawak at approximately 1° N and 112° E. It covers 24,040 ha in the headwaters of the Batang Ai River, upstream from the Batang Ai Hydroelectric Scheme. The eastern boundary of the Park lies along the international boundary with Indonesia. To the North, the Park is contiguous with the Lanjak-Entimau wildlife Sanctuary that in turn, adjoins the Bentuang-Karihun National Park in Indonesia, forming a protected area of about one million ha.

The dam for the hydroelectric scheme is 250 km by road from Kuching. From the dam, access to the Park takes from one and a half hour to two hours by outboard-powered longboat, depending on the level of river water.

The terrain is extremely steep with an altitudinal range of 100 m to 760 m above sea level over most of the Park, rising to 975m at Bukit (Hill) Ensanga on the western boundary. Almost the whole area is forested, although a high proportion is old secondary forest or abandoned rubber gardens (Meredith, 1993a). The park is the home of a varied fauna, notably orang utan (*Pongo pygmeus*) and the white fronted langur (*Presbytis fronttata*).

The Iban people have practiced long-fallow cultivation of hill rice for at least four centuries, “... often-penetrating deep into the remote valleys to escape tribal feuding or the ‘discipline’ of the Brooke regime” (Meredith, 1993a; p.9). However, as already described, most of the people moved out of the area in 1963 as a result of ‘confrontation’ with Indonesia. In 1984 when the park was first proposed, there were hardly any recent cultivations and no longhouses inside the boundaries (National Park and Wildlife Office [NPWO], 1984).

People began to move back into the area in 1987 as a result of flooding of the lower valley for the hydroelectric scheme. A majority of the local people objected to the establishment of Batang Ai National Park. Ngui (1989; p.1) pointed out that the local people “... feared that their so-called rights and privileges could be withdrawn at any
time [and that] they feel that they might not be adequately compensated as they have had unpleasant experiences with the Batang Ai resettlement exercise”. Further dialogue and conservation education exercises were conducted to convince the local people that the establishment of the park would not jeopardise their rights and privileges which were incorporated into the Park Proclamation when it was gazetted in 1991. By 1993, three communities grew rice wholly or partly inside the park boundary.

The Park encompasses the territories of nine Iban longhouses (Meredith, 1993a; Horowitz, 1998). Meredith (1993a) suggests that about 75 per cent of the total area is subject to Native Customary Rights and consists of enclaves within the Park boundary that are not legally part of the Park. The boundaries of the enclaves have not been defined, and in practice, Park management and local people have to work together to manage their lands as a single unit. In addition, the inhabitants of seven longhouses have privileges to fish, hunt, collect forest produce, and take timber and poles for firewood and construction of their longhouses and boats for their own use, but not for barter or trade (Meredith, 1993a).

This has led to de facto joint management initiatives as neither the Forest Department nor the local community want outsiders hunting and fishing in the park. The outcome is that the Forest Department employed local people to carry out enforcement in the Park (Tisen and Meredith, 2000).

4.7 SUMMARY OF CHAPTER

The people of Batang Ai have for generations been subjected to outside influences on their lives dating back to the middle of the sixteenth century when the Iban first arrived from the Kapuas Basin replacing the Penan and the Bukitan. In the late 19th and early 20th century, the Iban themselves saw outside ideas forced upon them, they were pushed into the upper reaches of Batang Ai to escape the discipline of the Brookes’ government. Lack of farmland and intertribal war forced some groups to migrate to other areas into the Embaloh and the Rajang area.
In 1964, the Iban of Ulu Batang Ai experienced another outside influence on their lifestyle, they were removed from the border areas of Sarawak to escape the infiltration of Indonesian military personnel into Sarawak. Again in 1980, they were forced to move to resettlement schemes as they stood in the way of development for the hydroelectricity generation scheme.

Prior to 1960s the migrations of Iban from Batang Ai were voluntary, either to escape tribal war, or to seek new territories with more game and better farmland. After the 1960s, they were resettled against their free will and this created a lot of dissatisfaction with government policies. This led to misunderstanding and mistrust of government initiatives in the area and when Batang Ai National Park was proposed, it was seen as one of the ways in which the government cheated the locals (Horowitz, 1998). The local Iban communities agreed to the establishment of BANP only after extensive dialogue and conservation education programme were conducted, some involving the personal attention of the Minister in-charge of the National Park.

The Iban rely on forest products for a variety of uses and have tailored their management of these resources according to their availability (Horowitz, 1998). Traditionally, the management of resources is governed by customary law (adat) which is rarely broken for fear of divine retribution (Lembat, 1989). Certain communally owned forest areas are especially reserved and serve as reservoirs for wild animals, trees, and plants for exclusive use by the community and are not made available for farming. Forest areas not made available for farming include pulau pesaka, tanah ulit and pendam (Horowitz, 1998). These forest areas serve to conserve areas of forest, provide habitats for wildlife and act as a genetic reservoir for the surrounding areas. To the Iban, certain species of plants and animals are considered as taboo (mali) and must be protected. These have positive spin-offs for conservation.

Batang Ai has experienced drastic socio-economic changes and has joined the rest of Sarawak in being affected by the cash economy. The people need to send their children to school, to travel to town centres for medical attention and to be able to purchase goods to
enhance their standard of living. They are no longer satisfied with subsistence benefits from the natural resources but want to be able to gain cash benefits from them. Exposure to outside ideas such as Christianity, education, technological innovations and commercialisation are replacing traditional ideas and knowledge (Horowitz, 1998). This has led some to disregard the traditional customs (adat), and to hunt, fish, and gather jungle produce for profit. This also leads some to disregard park regulations and abuse their rights and privileges by harvesting natural resources from the park for sale and trade (Horowitz, 1998).

Tourism is seen as a way in which the local people could gain cash benefits which could reduce their dependence on natural resources thus promoting the conservation values of the park. The essence of the research question is that since the establishment of Batang Ai National Park twelve years ago, has tourism been able to provide such benefits and what currently are the perceptions of the local people on tourism and conservation?
CHAPTER FIVE
METHODOLOGY

5.0 INTRODUCTION

The previous chapters reviewed the literature on local communities and their participation in tourism and traditional indigenous resource management methods. Improved accessibility to areas which once were remote, leads to increased rates of resource exploitation. Increased accessibility also leads to increased commercialisation of the natural resources. External influences and the ability to earn wages reduces the pressure on individuals to follow communal norms, and can lead to increased exploitation of resources held in common for personal gains.

It has been consistently argued that alternative sources of income from tourism would reduce the dependence of local communities on the natural resources as well as occupying their time thus reducing their free time to hunt, fish and gather jungle produce (Horowitz, 1998; Bennett et al., 2000). Hence the critical question is the extent to which this is true in Ulu Batang Ai. Following from this, does tourism benefit conservation as well as local communities and how do the local people perceive tourism in their area? This chapter describes and discusses the methods that were used in this research to answer these questions.

5.1 RESEARCH METHODS

For this study, both qualitative and quantitative data collection methods were used. "The most obvious distinction between the two is that quantitative methods produce numerical data and qualitative methods result in information which can best be described in words" (Casley and Kumar, 1988; p.3). Quantitative methods require a survey that would reach many people but the data would not be in-depth. Qualitative approaches allow in-depth investigation about issues from fewer people and will produce "...descriptions of situations, events, people, interactions and observed behaviours, direct quotations from
people" (Casley and Kumar, 1988; p. 3). Both methods were clearly necessary. Information on some important issues was obtained through a survey to measure their significance to the community, while qualitative techniques were expected to add depth and insights to the research questions. A variety of additional techniques ranging from informal observation, to a structured questionnaire were employed. Informal methods of gathering data such as interviews, conversations and observations add to the interpretation of quantitative data.

Participatory rural appraisal (PRA) techniques were also used to gather data. PRA is a method of involving local people in the gathering of information and “...assumes that popular participation is a fundamental ingredient in project planning” (PRA Hand Book, 1991; p. 2). It recognises that local people know best about their own community and emphasises the importance of building partnerships. PRA helps people feel ownership of the information, as they are involved in the processes of information gathering and deciding what is important. The process would thus encourage community residents to think systematically about the issues involved. Community group interviews and discussions using adapted PRA techniques were central for this study.

5.2 TRIANGULATION

Mathison (1988; p.13) suggests that “good research practice obligates the researcher to triangulate, that is, to use multiple methods, data sources, and researchers to enhance the validity of research findings”, and to aid in the elimination of bias. “Trangulation is meant to be a heuristic tool for a researcher” (Janesick, 1994; p.214). It is “ a strategy that adds rigor, breadth, and depth to any investigation” (Denzin and Lincoln, 1994; p. 2). “The primary reason of triangulation is the recognition that data-set or investigator survey bias can be introduced by using only one research method [and] ... it has been argued that the deficiencies of any one method can be overcome by combining methods and thus capitalizing on their individual strengths” (Oppermann, 2000, p. 143).
Denzin (1978, cited in Mathison, 1988, and Janesick, 1994) outlines four types of triangulation comprising of (a) data triangulation including time, space, and person, (b) investigator triangulation, (c) theory triangulation, and (d) methodological triangulation. However, only three types of triangulation are seriously recommended as “... theoretical triangulation is problematic at best, and likely impossible in reality” (Mathison, 1988; p.14). Data triangulation refers to using several data sources, for example, the inclusion of more than one individual as a source of data, and it may include time and space based on the assumption that understanding a social phenomenon requires its examination under a variety of conditions (Mathison, 1988). Investigator triangulation refers to more than one investigator in the research process. This is usually built into the research process because most studies require more than one individual to achieve the necessary data collection (Mathison, 1988). Methodological triangulation refers to the use of within method triangulation or between-methods triangulation, in the research process. The within methods triangulation approach has limited value as essentially only one method is being used, and most researchers focus primarily on between-methods triangulation (Mathison, 1988). The rationale is that by combining methods, observers can achieve the best of each method while overcoming any deficiencies and flaws (Mathison, 1988).

For this study, three triangulations types were employed. Though the study focused on the seven longhouses within, and adjacent to, Batang Ai National Park, data were also collected from ex-members of the community who are now residing in Resettlement Schemes and elsewhere. These respondents were recognised by the residents of the seven longhouses as legitimate members of their communities and in so far as they may continue to exercise their privileges over the park. This provided the researcher with alternative data sources, particularly on their perception on tourism and conservation, and hence is an example of expanded triangulation of data.

Investigator triangulation was allowed for by engaging at least two research assistants for any one session, particularly in conducting the semi-structured interviews. This enabled better interpretation and recording of the subjects discussed and all outcomes were thus crosschecked. Finally, methodological triangulations involving both quantitative and
qualitative methods were employed for this study. To obtain qualitative data, all individuals of 18 years old and above present in the longhouse during the survey period were interviewed and were invited to participate in the community group semi-structured interviews. Knowledgeable individuals who were in a position to provide relevant information, ideas and insights on a particular subject were interviewed to obtain in-depth information. Thus, through triangulation, increased validity of the findings of this study were expected.

5.3 PRETESTING OF RESEARCH INSTRUMENTS

Stewart and Shamdasani (1990; p.66) suggested that “no matter how experienced the researcher and moderator or how thorough and conscientious the designers, it is impossible to predict in advance the way respondents will interpret and respond to questions”. Consequently, pretesting of questionnaires is essential. They also suggest that pretests can be done on a few individuals or a focus group and it is highly desirable to pretest with respondents representing those who will participate in the actual interview or survey as this provides an opportunity to identify questions that are not understood easily as well as to determine whether the wording of questions is appropriate.

For this study, both the questionnaire and the semi-structured checklist were pretested on two different occasions. The English versions of the research instruments were pretested using Malaysian Students at Lincoln University in February 2003 to determine whether they understood the questions. Malaysian students were selected, as they are familiar with the socio-cultural setting in Sarawak, which gives them the advantage of being able to critically evaluate questions and advise on changes for improvements.

As the target population were mainly rural Iban with a very poor understanding of English, the research instruments were translated into the Iban language. Pretesting of the Iban version was conducted with a group of twenty-two people (ten male and twelve female) at Rumah Rimong, Lubok Antu on the 3rd March 2003. These people were originally from Rumah Rimong at Tapang Jarau Entambah, Ulu Lubang Baya, who have
resettled in Lubok Antu and were one of the target populations. A schoolteacher and an officer from the Agriculture Department were among the group.

Those present were divided into two groups, those that understood English and were well versed in reading Iban were given the research instruments to read and discuss among themselves to see if they understood the meaning of the questions. The researcher himself assisted this group by explaining the meanings in English where the respondents were not certain as to what the Iban version of the question intended to elicit.

The second group were those who preferred to listen and discuss the questions with the research assistant. This group comprised mainly older and illiterate people. The research assistant, who was fluent in Iban, conducted the discussion. He recorded the comments by the group and advised the researcher on the correct use of phrases and words. This was crucial as in Iban, using words or phrases in a different context can give a very different meaning to the words or phrases. All comments and recommendations were incorporated into the final draft of the research instruments.

5.4 DATA COLLECTION

Collection of data involved two major phases -- a review of secondary data prior to the field research, and the gathering of primary data. The gathering of primary data included a survey, discussions with key informants, and semi-structured community group interviews.

The use of key informants is a major research instrument in any kind of field research (Gabriel, 1991). Key informants believed to be able to offer insights into the issues under study were identified on the basis of their leadership roles or appropriate skills. They were recruited to ensure representation of the various groups, organisations and diverse viewpoints and concerns. Key informants included representatives of longhouse communities, tour operators, local business personnel, and local state government officials.
The timing of interviews is extremely important. The interviewer must be aware of the daily work schedules, seasonal activities, work habits, climate and its effects, and the interviewees’ willingness to talk (Beebe, 1987; Rhoades, 1987). The interviews therefore should be conducted at a time suitable to the interviewee, usually in the early morning or in the evening so that daily work patterns would not be disrupted.

The target population were mainly rural Iban who often had very limited command of other languages. For this reason, all questions were translated into the Iban language and semi-structured group interviews were conducted in Iban. As the researcher does not have fluency in the Iban language, Iban interpreters were recruited from among the officers of the Forest Department including a local Iban who was currently employed in the Batang Ai National Park. For the duration of the study they became research assistants. Apart from their language skills, they were very knowledgeable about local customs and culture, and conversant with conservation issues.

For longhouse communities in Sarawak, the months of March and April are theoretically the most suitable period for collecting data as it is the least busy time. It is normally between harvesting and planting of hill rice and most people are home. However, during the survey month of March 2003, most of the households in Batang Ai were still harvesting rice and were out in the field all day, so most of the surveys were conducted in the evening or early in the morning. This was possible as in most cases the researcher stayed overnight at the longhouse under study.

5.4.1 Secondary data collection

The first step to data collection is reading and reviewing existing information sources before entering into the field (Gabriel, 1991). Available secondary sources of information include published and unpublished literature and reports, socio-economic and demographic statistics, project documents, reports, and maps.

The purpose of secondary data collection was to understand the local socio-cultural and economic conditions of the study area. General information on agricultural production
patterns, vegetation, land use, population changes, topography and information on tourism in the area were reviewed. This gave the researcher a clearer idea of the target population, the time needed to travel within the study area and what to expect socially and culturally in dealing with the target communities. For example, at the study location, it is more than just a matter of courtesy on arrival to approach the headman and explain the intention of the study. Before a researcher can approach any individual to conduct a survey in a longhouse or within the area under the jurisdiction of the longhouse, approval must be obtained. Failing this, a researcher would be considered as an intruder to the community.

5.4.2 Primary data collection

A total of eleven longhouses were selected for the study. Seven of the longhouses are located in or just outside Batang Ai National Park where the inhabitants have gazetted rights and privileges to hunt, fish and gather jungle produce from the Park. The seven longhouses are Rh. Changing, Rh. Ngumbang and Rh. Kasi in the Delok River; Rh. Griffin in the Jingin River; Rh. Rimong, Rh. Endan and Rh. Ayum in the Batang Ai (Fig.3). During the survey however, one of the comments by the inhabitants was that the survey should be extended to include another four longhouses. Two of the longhouses were located just downriver from the Park Headquarters (Rh. Ipang and Rh. George) and the other two were in the Skrang Resettlement Scheme (Rh. Rumping and Rh. Betok), sixteen kilometres from Lubok Antu (Fig. 2). The main reason for extending the survey to the other four longhouses was that some of the people originally from the seven longhouses which have rights and privileges over the park are now residing in these longhouses and continue to exercise their rights and privileges.

In gathering the information required, three survey methods were used: individual surveys, community (longhouse group) semi-structured interviews and in-depth interviews with key informants. Researcher observation was also used to record information that was not available from the main survey such as conditions of the longhouse and matters of concern about tourism and conservation.
The use of the various methods allows the researcher to gather both quantitative and qualitative data on the socio-economic status, tourism participation, perceptions of tourism and conservation, and the benefits derived from tourism. It also allows the data collected to be crosschecked to determine the validity of the information.

Field surveys were conducted from early March 2003 to the end of April 2003; commencing with pretesting the research instruments with one of the longhouse communities. Their feedback and comments were incorporated into the final questionnaire. The survey was conducted by the researcher assisted by officers from the Forest Department. In most cases there were four officers from the Forest Department assisting with the survey.

The main reason for enlisting research assistants for this study was because the researcher was not fluent in the Iban language and that many potential respondents were not very conversant in English or Bahasa Malaysia\textsuperscript{17}. The interviews, therefore, had to be conducted in Iban. Further, it enabled the researcher to reach out and interview all potential respondents within a short time, often between five in the afternoon and midnight when the longhouse residents have returned from their farms, or between six and eight in the morning just before they leave for their farms.

The research assistants were given training on how to conduct the interviews and to be able to recognise if the respondents misunderstood the question. They were also trained not to influence respondents through using leading questions or model answers. They were advised to drop a question in the event that the respondent did not understand the question after a second attempt so as not to offend the respondent.

The longhouse headmen were given prior warning of our intention to visit their longhouse on a particular date. Upon our arrival at the longhouses, we paid a courtesy call to the headmen and explained our intentions. In all cases, we were welcomed by the longhouse communities. We were often invited to dinner hosted by the longhouse

\textsuperscript{17} Bahasa Malaysia is the National language in Malaysia.
headmen, in which members of the longhouse *bilik* (individual family units) contributed food. The dinner gave us the opportunity to observe the type of food served and in a number of cases it included wild meat, fish or jungle produce.
Tourist route from Borneo Adventure
Tourist route from Hilton Batang Ai Resort
* All the residents has moved to resettlement schemes at Lubok Antu.
* : Tourist longhouses

Figure 3: Location of Longhouses in Ulu Batang Ai
(own data over map supplied by Sarawak Forest Department)
5.4.2.1 Individual Survey (Quantitative data)

Quantitative data were collected through a questionnaire survey method. Potential respondents included all males and females present in the longhouse during the survey period, who were 18 years or older, and competent to give consent to be interviewed. Potential respondents were approached to participate when they were observed to be in a relaxed mood after they had done their day’s work.

The questionnaire covered a wide range of information including demographic characteristics of respondents, socio-economic status, types and level of participation in tourism activities, and their knowledge, beliefs and attitudes towards tourism and conservation. The questionnaires were written in English and Iban (Appendix 3a and 3b), and respondents were interviewed in English or Iban depending on their preference. An Iban speaking research assistant conducted interviews in Iban.

Using a cover letter affixed to the questionnaire, the researcher or research assistants approached potential respondents and asked them to participate in the study. The cover letter briefly described the purpose of the study and the assurances about the anonymity and confidentiality, and that the study had been approved by Lincoln University Human Ethics Committee. The letter also informed potential respondents of the voluntary nature of the study. Written consents were requested, but in a number of cases, potential respondents were unwilling to sign a consent form but were happy to participate in the survey. The likelihood of this happening was identified by the researcher during the pilot study and was communicated to Lincoln University’s Human Ethics Committee, who approved that written consent was optional in such a situation.

Each interview took thirty minutes to one hour depending on the level of detail of the responses. However not all eligible respondents were available to be interviewed as some were not in the longhouse during the time of survey; some were away earning wages in town, others were out visiting relatives and so on. In most cases all potential respondents agreed to be interviewed. Surveys were conducted in thirteen locations; 11 longhouses, Ng. Delok Park Headquarters and Ng. Lubang Baya Ranger Station (Table 1). Ng. Delok
Park Headquarters and Ng. Lubang Baya Ranger Station were included in the survey as most of the workers in these two locations were local people from among the nine longhouses adjacent to Batang Ai National Park. Of the total 152 respondents, only seven preferred to be interviewed in English. Three men and ten women were not able to participate in the survey when approached, representing three per cent of men and fifteen per cent of women (Table 1). The three men and two women were elderly, with some difficulty in hearing or understanding questions. Their poor hearing was used as reason for declining to be interviewed. The lack of confidence in being interviewed was observed as the main reason for declining among the other ladies. The most common reason for declining to participate was “other people could answer your questions better than I do” and with an apology, they would excuse themselves.

Table 1: Number of respondents by sex in the various locations

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SEX</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rh. Changging ak Resa, Pala Taong, Sg. Delok.</td>
<td>4 Male</td>
<td>5 Female</td>
</tr>
<tr>
<td>Rh. Ngumbang ak Jangu, Ng. Sumpa, Ulu Delok.</td>
<td>14 Male</td>
<td>7 [1] Female</td>
</tr>
<tr>
<td>Rh. Kasi ak Sangong, Ng. Jambu, Ulu Delok.</td>
<td>5 Male</td>
<td>4 [1] Female</td>
</tr>
<tr>
<td>Rh. Griffin ak Andin, Sg. Jingin.</td>
<td>6 Male</td>
<td>3 [2] Female</td>
</tr>
<tr>
<td>Rh. Endan ak Luyoh, Wong Tibu, Batang Ai.</td>
<td>3 Male</td>
<td>1 [1] Female</td>
</tr>
<tr>
<td>Rh. Ayum, Bertik Scheme, Lubok Antu</td>
<td>11 Male</td>
<td>3 [2] Female</td>
</tr>
<tr>
<td>Rh. George, Tapang Pungah, Delok.</td>
<td>5 Male</td>
<td>3 [1] Female</td>
</tr>
<tr>
<td>Rh. Rumping ak Ngalana, Lubok Numpu, Skrang.</td>
<td>3 [1] Male</td>
<td>9 Female</td>
</tr>
<tr>
<td>Rh. Betok, Ng. Jingin, Skrang.</td>
<td>12 Male</td>
<td>9 Female</td>
</tr>
<tr>
<td>Batang Ai National Park (Ng. Delok Park Headquarters and Ng. Lubang Baya Ranger Station)</td>
<td>13 Male</td>
<td>2 Female</td>
</tr>
</tbody>
</table>


[1]: Number of potential respondents declining to participate when approached.
5.4.2.2 Community group interviews and discussion

Group interviews are "... useful when it comes to investigating what participants think, but they excel at uncovering why participants think as they do" (Morgan, 1988; p.25). Although group interviews do not provide the same depth of information as individual interviews, they have been found to be helpful particularly when seeking information about natural resources or community resources management, local histories, and local institutions (Casley and Kumar, 1988; Sharpa, 1996). Gabriel (1991) suggests that information provided by the group may be more accurate than that gathered during individual interviews, because interviewees are open to correction by fellow participants. Semi-structured interviewing is a relatively quick way of tapping the experience of stakeholders and their day-to-day activities in the area under investigation (Casley and Kumar, 1988). To initiate semi-structured interviews, a limited number of pre-determined questions were used.

Community group interviews were for gathering resource information and perceptions of conservation and use held by the community being studied. In an Iban community, group interview methods resemble longhouse-meeting format known as randau ruai and "... take advantage of the potential of disclosure, stimulation and confirmation of ideas that can occur in ethnically homogenous group settings" (Jihen, 2001; p. 62). Community group interviews involved both males and females of 18 years of age and above and able to give consent to be interviewed. In all cases, all those who were able to give consent participated in the interview (Table 2).

The researcher approached the headman of each longhouse, explaining the purpose of the study and requested his cooperation in gathering all members of the longhouse of 18 years and above for a group interview. The gathering was conducted in the evening from 8.00 pm and may last till 10.00 pm depending on the number of participants and how actively they participated.

A research assistant fluent in Iban conducted the interview. Often there were two additional research assistants who were also conversant in Iban who acted as recorders.
during the proceedings. The interviews were also tape recorded to double check and confirm information that was manually recorded during the proceedings.

The participants were briefed on the purpose of the study and that their participation was on a voluntarily basis (Appendix 3a and 3b). They were also informed of the assurances about the anonymity and confidentially, and that the study had been approved by Lincoln University Human Ethics Committee. Written consents were requested but in almost all cases potential respondents were unwilling to sign but were happy to participate; so the interviews proceeded without written consent.

The interviews were conducted using a semi-structured interview checklist to guide the proceedings (Appendix 4a and 4b). The questions were asked in the order listed in the semi-structured checklist, however, if the respondents were not giving sufficient detail in their answer, some probing questions were used to guide the conversation.

This survey technique produced collective information, after being agreed upon and confirmed by a majority of the members. This information served to supplement and crosscheck information gathered from the quantitative survey.
Table 2: Community group interviews and discussions: Participant numbers

<table>
<thead>
<tr>
<th>Location of Semi-</th>
<th>Date</th>
<th>Number of</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>biliks</td>
<td>Male</td>
</tr>
<tr>
<td>Rh. Kasi</td>
<td>12th March 2003</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Rh. Ngumbang</td>
<td>13th March 2003</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>Rh. Changging</td>
<td>14th March 2003</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Rh. Griffin</td>
<td>15th March 2003</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Rh. Endan</td>
<td>16th March 2003</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Rh. Rimong</td>
<td>17th March 2003</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Rh. Ayum</td>
<td>18th March 2003</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Rh. Rumpang</td>
<td>19th March 2003</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Rh. Betok</td>
<td>20th March 2003</td>
<td>34</td>
<td>19</td>
</tr>
<tr>
<td>Rh. George</td>
<td>10th April 2003</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Rh. Ipang</td>
<td>11th April 2003</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>169</strong></td>
<td><strong>109</strong></td>
</tr>
</tbody>
</table>

5.4.2.3 Key informant interviews

Key informants are essentially knowledgeable individuals who are in a position to provide relevant information, ideas and insights on a particular subject. They often tend to have the most power, have higher incomes, or are the most informed or literate individuals (Gabriel, 1991). One advantage of separately engaging this group is that researchers may be able to gather more data from key informants than from other individuals. However as a consequence of their leading roles, information gathered may not be representative of the general community (Gabriel, 1991). Thus, by only focusing on key informants, researchers may have increased sampling bias in their study.

The key informants in this study included representatives from government agencies, non-government organisations, private sector, and local organisations (Appendix 1). After an introductory conversation, the interview begins with simple questions. The in-depth interviews followed an unstructured and informal route of probing on a one-to-one
basis in order to dwell deeper into the various aspects related to the research, and obtain detailed information.

Sixteen in-depth interviews were conducted over the course of the fieldwork. Interviews ranged in length from 45 minutes to two hours. Most respondents chose to be interviewed in their office during lunch or tea break or after office hours, with the exception of one of the respondents who preferred to meet in a café. The choice of venue was up to the respondents as it was important that they felt comfortable.

In all cases, the interviews were recorded on tape for later transcription. Before the commencement of the interview, the respondents were asked if they would allow the interview to be recorded in tape, and all agreed. Twelve of the interviews were conducted in English while four were conducted in local Malay\textsuperscript{18}.

5.4.2.4 Researcher observations
During the fieldtrip to each of the longhouses, the researcher also made personal observations on the general conditions of the longhouses, the availability of wild meat served during mealtimes, the facilities available to the communities such as electricity, piped water supply and availability of boats and engine. At Rh. Ngumbang, the researcher was able to observe a group of tourists at the longhouse and how they participated in tourism activities, and the infrastructure which ranged from transport, accommodation and guiding. The researcher was also able to talk with the tourists about their experiences during their visit and noted their general satisfaction with their experience. This information was used to crosscheck the data gathered during the survey as well as the semi-structured interviews.

5.5 DATA ANALYSIS
The Statistical Package for Social Sciences (SPSS) version 8.0 was used to analyse the data. Most questions were coded and entered into a spreadsheet. SPSS generated frequency tables (percentages and means) were the main statistics obtained. Correlation

\textsuperscript{18} A local version of the Bahasa Malaysia, the official language in Malaysia.
analysis was performed to identify the strength of relationship between selected attributes of tourism and conservation. The Chi-square test was used to see if significant differences existed between longhouses where there was tourism, and longhouses where there was no tourism, with attributes of conservation and tourism. A one way ANOVA was used to identify the existence of any significant differences in tourist spending in the different longhouses.

The semi-structured interviews and the key informants interviews were transcribed word for word along with any notes made by the researcher at the time of the interview. Where interviews were conducted in Iban or local Malay, they were transcribed in that language and then translated into English. The research assistant assisted with the meaning of certain words and phrases where the researcher was not sure of its actual meaning. These notes provided the themes that make up a significant part of the results section of this thesis.

In analysing the data, three categories were observed with respect to longhouse tourism in the study area. To facilitate better understanding of the significance of this factor, longhouses that do not have tourist visits at all are referred to as ‘non-tourist longhouses’, those with few tourist visits are referred to as ‘few-tourist longhouses’ and those with regular tourist visits are referred to as ‘tourist longhouses’ (Table 3). Respondents from Batang Ai National Park were included in the analysis according to their longhouses. Two of the respondents in Batang Ai National Park do not live in longhouses and are excluded from the analysis, thus, the total respondents for analysis was 150.
Table 3: Categories of tourist longhouses

<table>
<thead>
<tr>
<th>Categories</th>
<th>Name of longhouses</th>
<th>Location/Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-tourist longhouses</td>
<td>i. Rh. Rumpang</td>
<td>Skrang Resettlement Scheme</td>
</tr>
<tr>
<td></td>
<td>ii. Rh. Betok</td>
<td>Skrang Resettlement Scheme</td>
</tr>
<tr>
<td></td>
<td>iii. Rh. Ayum</td>
<td>Lubok Antu Resettlement Scheme. Some tourists visited Rh. Ayum in Ulu Batang Ai, however, the respondents in Rh. Ayum refer to their home in the resettlement scheme.</td>
</tr>
<tr>
<td></td>
<td>iv. Rh. Rimong</td>
<td>Lubok Antu Resettlement Scheme</td>
</tr>
<tr>
<td></td>
<td>v. Rh George</td>
<td>Batang Ai Lake</td>
</tr>
<tr>
<td>Few-tourist longhouses</td>
<td>i. Rh. Changging</td>
<td>Delok River</td>
</tr>
<tr>
<td></td>
<td>ii. Rh. Kasi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. Rh. Griffin</td>
<td>Jingin River</td>
</tr>
<tr>
<td></td>
<td>iv. Rh. Endan</td>
<td>Ulu Batang Ai</td>
</tr>
<tr>
<td>Tourist longhouses</td>
<td>i. Rh. Ngumbang</td>
<td>Delok River. Tourists bought in by Borneo Adventure.</td>
</tr>
<tr>
<td></td>
<td>ii. Rh. Ipang</td>
<td>Batang Ai Lake. Tourists brought in by Hilton Longhouse Resort.</td>
</tr>
</tbody>
</table>

5.6 LIMITATIONS OF THE STUDY
One of the limitations of this research was related to the question of validity of the data collected due to the fact that the researcher was recognised as a government officer with administrative influence over the study area. The researcher recognises the probability that some respondents may have felt subtle pressure to respond in ways that they feel the researcher expects or, which will best serve their own self-interest. In addition some information may be withheld for similar reasons. To gain the respondents cooperation the potential respondents were briefed on why the research was being conducted. The
researcher observed that respondents were very cooperative and did not appear to withhold any information and seemed happy to participate in both the individual survey and the community group interviews. However, it was hard to tell whether or not the respondents were responding strategically to some questions.

The tendency of the respondents to jump into answering the question was observed as one of the limitations of the study. Often the researcher or the research assistant had to re-emphasise the question to elicit the appropriate meaning. One of the questions often misunderstood was question 25 (Appendix 3a and 3b), which was, 'do you think that tourism will increase, decrease or stay the same in your longhouse in the next 12 months?' The immediate response was often 'increase'. However when the next question was raised that is, why do you think that tourism will increase in your longhouse in the next 12 months, the response is, 'we want more benefits from tourism'. This shows that the respondent had not understood the first question. In this situation, question 25 is raised again with the researcher asking it as, 'in the next 12 months, will there be more tourists coming to your longhouse and why?' In the event that the respondent still did not respond consistently, the question is marked off as not understood. The researcher and research assistants avoided telling the respondent that he or she has not understood the question so as not to offend the respondents or influence their response to other questions.

For this study, the semi-structured group interviews were used to crosscheck data generated from the survey. In addition, the researcher made personal observations of situations for crosschecking information. The research assistants were trained to recognise responses that the respondents misunderstood and to seek confirmation of respondents without being offensive. This filtering and focusing of information helped to identify critical issues.

5.7 SUMMARY OF CHAPTER
A questionnaire survey, community group semi-structured interviews, key informant interviews and researcher observation were all used to investigate whether or not tourism
does benefit local communities and conservation in Batang Ai. This pragmatic approach is “... based on the idea that there is no absolute truth or no perfect way of doing research, given the complexity of social systems and the range of theoretical perspectives that underlie our understandings” of the local situations (Horn, 1994; p.64). When used together, the strengths and weaknesses of each method complement each other and, therefore, increase the validity of the research process (Mathison, 1988).

Triangulation procedures were used to enhance the validity of research findings and to aid in the elimination of bias. Methodological triangulation involving both quantitative and qualitative methods were employed for this study. Data collected from ex-members of the seven longhouses who were residing in Resettlement Schemes and elsewhere provided additional data sources. At least two research assistants were engaged for all of the semi-structured interviews which enabled better interpretation, crosschecking and recording of the subject discussed.

Prior to actual data collection, both the questionnaire and the semi-structured checklist were pretested. The English versions were pretested among Malaysian students in Lincoln University to determine whether they understood the questions. Their comments were incorporated into the final version which was translated into the Iban language. The Iban version was pretested with the Rh. Rimong community and their comments and recommendations were incorporated into the research instruments. This was crucial as in Iban, using words or phrases in a different context can give a very different meaning to the words or phrases.

A total of eleven longhouses were selected for the study. Seven of the longhouses were located in or just outside Batang Ai National Park where the inhabitants have gazetted rights and privileges to hunt, fish and gather jungle produce from the Park. Another four longhouses were included in the study as some of the people originally from the seven longhouses are now residing in these longhouses and they continue to exercise their rights and privileges in the park. Field surveys were conducted from early March 2003 to the end of April 2003. The research assistants assisted the researcher with the survey
because the researcher was not fluent in the Iban language and many potential respondents were not very conversant in English or Bahasa Malaysia. All individuals of 18 years old and over, present in the longhouse during the survey period were interviewed and were invited to participate in the community group semi-structured interviews.

The community group interviews were conducted using a semi-structured interview checklist to guide the proceedings. During the fieldtrip to each of the longhouses, the researcher also made personal observations on the general conditions of the longhouses, such as whether or not wild meat was served at meals, the facilities available to the communities such as electricity, piped water supply and availability of boats and engines. This information was used to check the data gathered during the survey as well as the semi-structured interviews. Sixteen in-depth interviews were conducted with key informants during the course of the fieldwork. They included representatives from government agencies, non-government organisations, private sector, and local organisations.

The SPSS (version 8.0) was used to analyse the data. Frequency tables were the main statistics obtained and correlation analysis was performed to identify the strength between selected attributes of tourism and conservation. The semi-structured interviews and the key informant interviews were transcribed verbatim along with any notes made by the researcher at the time of the interview and these notes provided the themes that make up a significant part of the results section of this thesis. To facilitate better understanding, the longhouses were categorised into three groups according to the level of tourist visits i.e., ‘non-tourist longhouses’, ‘few-tourist longhouses’ and ‘tourist longhouses’.

One of the limitations of this research was related to the fact that the researcher was recognised as a government officer with administrative influence over the study area and so some respondents may have felt pressure to respond in ways that they felt the researcher expected or, which would best serve their own self-interest. It was observed
that respondents were very cooperative and did not appear to withhold any information and were happy to participate in both the individual survey and the community group interviews, however, it was hard to tell whether or not the respondents were responding strategically to some questions. The information from the semi-structured group interviews was used to crosscheck data generated from the survey. In addition, the researcher also made personal observations for crosschecking and verifying information.
6.0 INTRODUCTION

This Chapter presents and discusses the results of the research. The results are based on the quantitative study findings. Qualitative materials from community group interviews and key informants are used to support and/or provide greater depth to particular quantitative findings. Socio-demographic characteristics of the longhouse residents under study form the first part of this chapter. The next section covers the time spent by local residents farming, gathering forest produce, hunting, fishing and other work. The knowledge, beliefs and attitudes of the residents towards conservation are then reviewed. This is followed by their knowledge, attitudes and expectations of tourism. A short summary is presented at the end of each section. The chapter concludes with a summary of their beliefs about and attitudes toward tourism as an alternative source of income.

6.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Socio-demographic characteristics of respondents are presented in Tables 4 - 7. Table 4 shows sex, age, length of residency and origin of respondents. Table 5, Table 6 and Table 7 shows their occupation, educational status and income.

6.1.1 Gender and age (Table 4)

Of the total respondents (N=152) surveyed, 62.5 per cent (n = 95) were male and 37.5 per cent (n = 57) were female. The percentage of males and females participating in the survey was not by design but by default, as more females than males declined to participate. Potential male respondents declined to participate for reasons associated with their physical conditions such as poor hearing while for females the reason was their lack of confidence in answering questions (see section 5.4.2.1).
The age of the respondents ranged from 18 to 88 years old, with the modal age being 50, and the mean being 47.5 years. The largest group of respondents was the age group of 41-50 years old, which made up 26 per cent of the sample (n=40). The lower percentage of participants from the younger adult age groups was due to their absence from the longhouse. They were either pursuing work in small towns or had resettled in major urban areas (Arman, 1997).

6.1.2 Length of residency and origin (Table 4)

Of the total respondents surveyed, 59 per cent (n = 90) were originally from Ulu Batang Ai including Jingin and Delok while 41 per cent (n = 62) were originally from other areas and had migrated to the study area through marriage. The length of residency ranged from one year to 88 years, with the mode being 18 years, and the mean, 29.5 years. The majority had been residing in the area for about eighteen years, the time when the longhouse residents started moving back to the Ulu as a result of the flooding of the lower valley of Batang Ai as a result of the construction of the hydroelectric scheme.
Table 4: Gender, Age, Length of residency and origin of respondents (N=152)

<table>
<thead>
<tr>
<th>Socio-demographic variables</th>
<th>Characteristics</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>95</td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>152</td>
<td>100</td>
</tr>
<tr>
<td>Age (years)</td>
<td>20 and below</td>
<td>6</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>Mode 50</td>
<td>19</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>Mean 47.5</td>
<td>40</td>
<td>26.3</td>
</tr>
<tr>
<td></td>
<td>51 - 60</td>
<td>18</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>61 - 70</td>
<td>26</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td>71 and above</td>
<td>13</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>152</td>
<td>100</td>
</tr>
<tr>
<td>Length of residency (years)</td>
<td>10 and below</td>
<td>16</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Mode 18</td>
<td>43</td>
<td>28.3</td>
</tr>
<tr>
<td></td>
<td>Mean 29.5</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td></td>
<td>51 - 60</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td></td>
<td>60 and above</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>152</td>
<td>100</td>
</tr>
<tr>
<td>Origin</td>
<td>Delok</td>
<td>31</td>
<td>20.4</td>
</tr>
<tr>
<td></td>
<td>Jingin</td>
<td>19</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>Ulu Batang Ai</td>
<td>40</td>
<td>26.3</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>62</td>
<td>40.8</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>152</td>
<td>100</td>
</tr>
</tbody>
</table>
6.1.3 Occupation (Table 5)

Eighty-five per cent (n=129) of the respondents were farmers. Ten per cent (n=15) worked in various government departments, of those, five per cent (n=8) worked in Batang Ai National Park. Four were self-employed, mainly as village shop operators. One person reported not working due to his physical condition. None of the respondents reported work related to tourism as an occupation, an indication that tourism related work in Ulu Batang Ai was either temporary in nature, or was not regarded as an occupation per se.

Table 5: Occupation of respondents

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>129</td>
<td>84.8</td>
</tr>
<tr>
<td>BANP staff</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>Govt. Servant</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>Self employed</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>Not working</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

6.1.4 Education (Table 6)

The levels of formal education among the respondents were very low. Fifty-five per cent (n=84) did not have formal education, 17 per cent (n=26) had primary education, 27 per cent (n=41) had secondary education and only one person had tertiary education. Fig. 4 shows that a majority of the older age groups do not have formal education. A Chi-square test shows a high relationship between age groups and level of education $\chi^2 (18, 152) = 83.12$, $p=0.000$. 

111
Table 6: Level of education of respondents

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal education</td>
<td>84</td>
<td>55.2</td>
</tr>
<tr>
<td>Primary education</td>
<td>26</td>
<td>17.1</td>
</tr>
<tr>
<td>Secondary education</td>
<td>41</td>
<td>27.0</td>
</tr>
<tr>
<td>Tertiary Education</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The majority of the respondents were low-income earners with 55 per cent (n=84) earning RM 100 or less per month. Eleven per cent (n=17) were in the RM 101 – RM 300 income bracket. Twenty-two per cent (n=33) were in the RM 301 to RM 500 income bracket and only 18 (12 %) reported earning more than RM 501 per month.

Sixty-four per cent (n=83) of all farmers (N=129) earned less than RM 100 per month. Thirteen per cent (n=17) of farmers were in the RM 101 to RM 300 income bracket, 20
per cent (n=27) of farmers were in the RM 301 to RM 500 income bracket and only two per cent (n=2) of farmers earned more than RM 500 per month. All the other occupations, including those working in Batang Ai National Park, earned more than RM 300 per month. Income above RM 2000 was earned by government servants and by those in business or self employed (Fig. 5). A Chi-square test shows a highly significant relationship between income and occupation, $\chi^2 (25,152) = 140.02, p=0.000$.

**Table 7: Income of respondents**

<table>
<thead>
<tr>
<th>Income bracket</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM100 and below</td>
<td>84</td>
<td>55.2</td>
</tr>
<tr>
<td>RM101 - RM 300</td>
<td>17</td>
<td>11.2</td>
</tr>
<tr>
<td>RM 301 - RM 500</td>
<td>33</td>
<td>21.7</td>
</tr>
<tr>
<td>RM 501 - RM 1,000</td>
<td>14</td>
<td>9.2</td>
</tr>
<tr>
<td>RM 1,001 - RM 1,500</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>RM 1,501 and above</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Figure 5: Income with occupation**

Sixty-nine per cent (n=58) of respondents without formal education (n=84), 46 per cent (n=12) of those with primary education (n=26) and 34 per cent (n=14) with secondary
education (n=41), earned less than RM 100 per month respectively. Those earning more than RM 1000 per month had secondary or tertiary education except for one who does not have formal education (Fig. 6). The person without formal education and earning more than RM 1,500 per month is a self-employed businessman operating a general store. A Chi-square test shows a highly significant relationship between income and education, $\chi^2 (15,152) = 76.37$, p=0.000.

**Figure 6: Income with education**

![Income distribution chart](chart.png)

Distribution of income with location showed that the majority (n=17) of the respondents in Rh Ngumbang were in the RM 301 – RM 500 income bracket, only one respondent earned less than RM 100 per month. In all other locations, except for Batang Ai National Park, the majority of respondents earned less than RM 100 per month (Fig. 7). Chi-square test shows a highly significant relationship between income and location, $\chi^2 (55,152) = 119.24$, p=0.000. A highly significant relationship also exists between income and ‘Tourist Longhouses Categories’, $\chi^2 (8,150) = 30.79$, p=0.000. This is expected as respondents in Rh. Ngumbang derived income from tourism and those in Batang Ai National Park were wage earners, while others in other longhouses do not have a regular source of income. There were four respondents from Batang Ai National Park earning
less than RM 100 per month. This is also expected as some of the labourers in the Park were employed on a two-month rotation basis and only worked when it was their turn, which may have been one to six times a year, depending on the size of the longhouse.

Figure 7: Income with location

![Income distribution chart]

During the community group interviews, the longhouse residents in the Ulu (Rh. Ngumbang, Rh. Kasi, Rh. Changging and Rh. Griffin, Rh. Endan and Rh. Rimong) shared a common view on transportation (access to market) and the opportunities to earn cash. They mentioned that transportation was very difficult before the construction of the dam, and associated the difficulty of earning cash with difficult transportation. For example, a speaker for the Rh Ngumbang residents said,

*Before the construction of the dam, it was very difficult to earn cash as it took four days just to travel to Lubok Antu and we can hardly sell our produce [produce would decay]. After the construction of the dam, there was an improvement as transportation is comparably much easier, it takes only half a*
day to travel to Lubok Antu. There is some improvement since the gazettement\textsuperscript{19} of BANP as we were given the opportunity to work \textit{there} on a rotation basis.

Rh. Ngumbang was the only longhouse that referred to tourism as a source of income. They stated, "... \textit{there is also additional work from tourism as an opportunity to earn cash}". A number of people in Rh. Rimong, Rh. Griffin and Rh. Changging pointed out that the Wildlife Protection Ordinance, 1998 providing for a total ban on sale of wildlife (SGG, 1998b) affected their income. For example, a speaker for the Rh. Griffin residents said,

\begin{quote}
\textit{When the government implemented a ban on trade of wild meat taken from the wild [in 1996], it is difficult for us to sell wild pig meat in town and thus reduced our opportunity to earn cash.}
\end{quote}

The Rh. Endan residents ascribed the difficulty in earning cash to the lack of cash crops. They had some experience with tourism but this lasted only for a short time. They described it thus;

\begin{quote}
\textit{Before the construction of the dam, it was very difficult to earn cash as we do not have cash crops to sell and it took more than a week just to travel to town. After the construction of the dam, it is about the same, as we do not have cash crop to sell. After the gazetting of the park, earning cash was a little easier especially in 1990 to 1992 when tourists were using the tourist lodge next to our longhouse. After 1992, there were no more tourists\textsuperscript{20} and it was also very difficult to earn cash. We can only earn cash when it is our turn to work for the Park on a two-month rotation basis but it takes a long time before we get our turn again.}
\end{quote}

\textsuperscript{19} The term gazettement is the commonly used term in everyday discussions of protected area status in Sarawak.

\textsuperscript{20} Borneo Adventure conducted tours to Rh. Endan from 1990 to 1992. When the late headman (Tuai Rumah Sumbu) died in 1991, Borneo Adventure pulled out of Rh. Endan and focused their tour in Rh. Ngumbang. By 1992, there were no more organised tours to Rh. Endan.
The residents in the resettlement schemes (Rh. Ayum, Rh. Betok and Rh. Rumpang) had a different view compared with their cousins in the Ulu. They echo the statement by Rh. Ayum that;

\[ It \text{ is much easier to earn cash here [resettlement schemes] as compared to those days in the Ulu as there are more job opportunities and our longhouse is accessible by road, making transportation very easy. } \]

The availability of job opportunities, and ease of accessibility to various facilities available in the resettlement schemes compared with living in the Ulu, are major forces pulling people out of the Ulu to resettlement areas.

6.1.6 Socio-demographic changes (population)

“Present longhouses in and around … [Batang Ai National] Park date from 1987/1988, … and most of them were off-shoots of communities in the resettlement areas established as a result of confrontation or the hydroelectric scheme” (Meredith, 1993; p. 17). In 1993 there were three longhouses in the Park: Rh. Rimong on the Lubang Baya river, Rh. Mujap at Ng. Bertik, and Rh. Tinggi at Ng. Sebarik on the Jengin river (Meredith, 1993). Today, the three longhouses have been abandoned except for the longhouse at Ng. Bertik which was maintained and used as a base for hunting and gathering by the families who had moved to Rh. Ayum in Lubok Antu. During the community group interviews, most of the residents including those in the resettlement schemes shared the same views with respect to socio-demographic changes in the Ulu. For example, a speaker for the Rh. Endan community said,

\[ There \text{ were more people before 1963 before the government resettled people from Ulu Ai to development schemes in Skrang. This was due to the confrontation with Indonesia. Some people stayed back in the Ulu and there were still more people before the dam was constructed. After the dam was constructed there were fewer people as most were moved down river to resettlement schemes. After the dam } \]
was constructed, more people continued to move to resettlement schemes, as there was no school, clinic or job opportunity in the Ulu.

However, the residents of Rh. Changging and Rh. Griffin, Rh. George and Rh. Ipang reported little change in the numbers of people in Jingin and Delok since the construction of the dam. Only Rh. Ngumbang reported some increase, they said,

After the National Park was gazetted, there were more people in Delok as some people moved back due to availability of job opportunities.

Their statement was based on the experience in their own longhouse where there had been an increase in job opportunities as they were actively involved in tourism, which coincided with the establishment of the Park. This is reflected in the increase in number of households from 23 in 1980 to 30 in 2003 (Table 8).

Table 8: Households in Longhouses based on community group interviews

<table>
<thead>
<tr>
<th>Longhouse</th>
<th>Year of construction</th>
<th>No. of bilik when longhouse was built</th>
<th>Number of Household in 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rh. Kasi</td>
<td>1977, 1999*</td>
<td>8, 8</td>
<td>8</td>
</tr>
<tr>
<td>Rh. Ngumbang</td>
<td>1980</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>Rh. Changging</td>
<td>1987</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Rh. Griffin</td>
<td>1994</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Rh. Endan</td>
<td>1989</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Rh. Rimong</td>
<td>1982</td>
<td>20 [28]</td>
<td>20</td>
</tr>
<tr>
<td>Rh. Ayum</td>
<td>1984</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Rh. Rumpang</td>
<td>1964</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Rh. Betok</td>
<td>1967</td>
<td>11</td>
<td>34</td>
</tr>
<tr>
<td>Rh. George</td>
<td>1940, 1983*, 2000*</td>
<td>13, 5, 7</td>
<td>7</td>
</tr>
<tr>
<td>Rh. Ipang</td>
<td>1977, 1985*</td>
<td>33, 10</td>
<td>14</td>
</tr>
</tbody>
</table>

[28]: Number of households in Rh. Rimong at Tapang Jarau Entambah, Ulu Lubang Baya.
*A new longhouse was constructed to replace the old one.
6.1.7 Summary of section

The percentage of males (62.5%) and females (37.5%) participating in the survey was not by design but by default, as more females than males declined to participate. The lower representation among the age group 21 to 30 years was attributed to their absence from their longhouses. Traditionally, young Iban men often travel out of their longhouse seeking employment or experience for an extended period of time and they often return to their longhouse later in life to a more settled lifestyle (Arman, 1997). Thus there was a lower representation from among the age group of 21 to 30 years.

The modal length of residency at present sites is 18 years which is about the length of time since they re-established themselves in the Ulu Batang Ai as a result of the flooding of the lower valley for the hydroelectric scheme. A majority (85%) of longhouse residents are farmers. The level of formal education is very low and a majority (55%) do not have any formal education. A higher percentage of the older age groups do not have formal education. A majority (55%) earn less than RM 100 per month but a higher income was recorded from people in other than farming occupations.

There is a highly significant relationship between income and location. This is expected, as respondents working in Batang Ai National Park are wages earners and those in Rh. Ngumbang derived income from tourism. Among the longhouse residents in Ulu Batang Ai, a majority of the Rh. Ngumbang residents were in the RM 301 to RM 500 income bracket, a higher number compared with those in other longhouses. This is attributed to their involvement in tourism.

All the longhouses in Ulu Batang Ai shared a common view that it was very difficult to earn cash before the construction of the dam. They attributed this to the difficulty of transportation as it took days to get to market and to sell products. After the construction of the dam, transport to and from market became much easier and earning cash was comparatively easier. Some members of the longhouses mentioned that they could sell products in the market to earn cash. However, others mentioned the lack of cash crops as the reason for the difficulty in earning cash, even though transport has improved. After
the gazettement of Batang Ai National Park, a number of longhouse residents mentioned
the total ban in trade of wild life as a reason for difficulty in earning cash. Those in the
resettlement schemes agreed that it is much easier to earn cash in the resettlement area
compared with the time when they were living in the Ulu. They attributed it to the
presence of more job opportunities and accessibility by road.

The forces pulling people out of the Ulu to resettlement schemes and to urban areas are
much greater than the forces keeping them in the Ulu. Lack of work opportunities and
access to facilities such as medical and education are forcing the people out of Ulu
Batang Ai. Three longhouses in Ulu Batang Ai are now deserted and a number are losing
their members. However, where work opportunities exist, as in Rh. Ngumbang, the
number of occupants has increased.

6.2 TIME SPENT FARMING, HARVESTING FOREST PRODUCE, HUNTING,
FISHING AND OTHER WORK

Respondents’ time spent farming, harvesting forest produce, hunting, fishing and other
work is presented in five sections. Chi-square tests were performed to test underlying
association among variables. A short summary of the section is presented at the end.

6.2.1 Farming

Eighty-five per cent of respondents reported that they were farmers and 15 per cent were
not farmers (see section 6.1.3). Forty-one per cent (n = 63) reported being full-time
farmers, spending more than five days per week farming and 53 per cent (n = 80) were
part-time spending less than four days a week farming (Fig. 8). Only six per cent did not
farm at all. This means that nine per cent of non-farmers also spent some time working
on farms. During the survey period, it was observed that a number of people employed in
the park worked on the family farm during their time off park work to supplement their
family income. It is a normal practice in the longhouse that family members having other
jobs will help out on the farm during their time off.
During the community group interviews, all residents reported that they farmed in areas within an hour walking distance from their longhouse. Those in the resettlement schemes claim to use modern methods of farming. A number of families in the resettlement schemes practice wet-rice cultivation where the same plot of land is cultivated year after year. Farming in the resettlement schemes is much more successful. For example, a speaker for the Rh. Rumpang resident said,

*Farming is much more successful as we use modern methods. We farm the same plot of land [wet-rice cultivation, pepper garden and vegetable garden] every year, and we use fertilizers and herbicides to reduce workload and increase yield.*

In Ulu Batang Ai, all the longhouses residents said that their methods of farming remained unchanged. They still practised traditional methods of farming by slash and burn without fertilizers and herbicides. Only the Rh. Ngumbang longhouse (which has
tourism income) said that they used fertilizers and herbicides "... to increase yield and to reduce the amount of time working in the farm".

Rh. Endan was the only longhouse farming the secondary forest within the boundaries of Batang Ai National Park. The residents of Rh. Endan and Rh. Griffin share the opinion that farming is not successful due to damage by wildlife. The residents of Rh. Ayum also hold a similar view, though they did not farm in the Ulu. For example, a speaker for the Rh. Griffin residents said,

Farming these days is not very successful as much of our crops are damaged by wildlife and very few people worked the farm.

6.2.2 Harvesting forest produce

Seventy per cent of the respondents participate in harvesting forest produce; 30 per cent (n = 46) did not. The majority 63 per cent (n = 95) spent less than two days per week harvesting forest produce and seven per cent (n = 11) spent more than three days per week harvesting forest produce (Table 9). Sixty-seven per cent (n = 64) of males and 74 per cent (n = 42) of females were involved in harvesting forest produce. A Chi-square test shows no significant relationship between gender and gathering forest produce, $\chi^2 (4,152)=7.19$, n.s. This is expected as traditionally both male and female participated in harvesting forest produce and forest products form a significant component in their diet and daily needs (Hong, 1987; Christenson, 2000). A majority of those that did not harvest forest produce were from the resettlement schemes where there is not much forest next to their longhouse and to travel to the Ulu where they have harvesting rights is too expensive. Collecting food from the forest does not require participation by all family members, hence the reason for those that did not harvest forest produce among the residents of longhouses in the Ulu.
Table 9: Time spent harvesting forest produce

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>46</td>
</tr>
<tr>
<td>&lt; 1 day per week</td>
<td>48</td>
</tr>
<tr>
<td>1 to 2 days per week</td>
<td>47</td>
</tr>
<tr>
<td>3 to 4 days per week</td>
<td>8</td>
</tr>
<tr>
<td>5 to 6 days per week</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
</tr>
</tbody>
</table>

During the community group interviews, all the residents including those in resettlement schemes said that they collected mushrooms (kulat), bamboo shoots, fern leaves (paku), heart of palms (ubod), fruits and other produce for food. They also collected rattan (we) and pandan leaves for baskets and mats. In addition, the residents in Batang Ai said that they also collected materials (ramu) for repairing of boats and longhouses from the forest and fruits of engkabang or illipe nuts (a’bang) for sale. This is consistent with observations by Chin (1981 cited in Hong, 1987; p. 30) that the most important forest products gathered include mushrooms, ferns, and the ‘hearts’ of wild palms and bananas, and bamboo shoots which then provided 10 to 25 per cent of food consumed.

All the residents in the Ulu (Rh. Kasi, Rh. Ngumbang, Rh. Changging, Rh. Griffin Rh. George, Rh. Ipang and Rh. Endan) reported that harvesting forest produce in Ulu Ai remains as successful as ever. The resident of Rh. Rimong in Lubok Antu and those in the three resettlements schemes (Rh. Ayum, Rh. Rumpang and Rh. Betok) said that collecting forest produce is no longer successful as there is little forest next to their longhouses and to travel to Ulu Batang Ai is too costly. Their needs were met instead from gardening and goods obtained from markets.

The residents of Rh. Kasi, Rh. Ngumbang and Rh. Changging in the Delok River, Rh. Griffin in Jingin River, and Rh. Ipang and Rh. George in lower Batang Ai claim to harvest jungle produce in the forest next to their longhouses and very seldom entered the National Park as it is too far up river and that most of the forest products they needed
were available in the forest nearby. The residents of Rh. Endan gather forest produce in Lubok Baya, Sg. Seridan and Rantau Paku, part of which falls within the boundaries of Batang Ai National Park. The residents of Rh. Rimong and Rh. Ayum gather forest products in Sg. Lubang Baya, and Ulu Batang Ai and Sg Bebiyong respectively, which fall within the boundaries of Batang Ai National Park. The residents of Rh. Rumpang and Rh. Betok were originally from Ulu Lubang Baya and Sg. Jingin and claim their traditional rights to collect forest produce from these areas. However, the residents residing in the resettlement schemes (Rh. Rimong, Rh. Ayum, Rh. Betok and Rh. Rumpang) seldom collect in the National Park as it is too costly to travel there. They obtained most of their vegetable requirements from their own vegetable plots, often incorporating planting vegetables for the market. A speaker for the Rh. Rumpang residents said,

_No one goes fishing, hunting or gathering. We purchased most of our needs from town. We obtained vegetables from our own garden._

The residents in Ulu Batang Ai do not need to collect forest produce from within the boundaries of the park as the forest areas next to the longhouses are able to provide them with their daily requirements. Thus, to enhance the conservation value of Batang Ai National Park, these forest areas next to the longhouses must be able to continue to provide the residents with their requirements of forest produce and not be converted into other forms of land use.

During the survey, all the longhouses in the Ulu served a number of vegetable dishes including fern (_paku_), mushrooms (_kulat_), bamboo shoots and heart of palms (_ubod_). Vegetable dishes served by residents of longhouses in the resettlement schemes were mainly those grown in their gardens.

6.2.3 Hunting

Sixty-five per cent (n = 99) of the respondents did not hunt. Of those who do hunt, 64 per cent (n = 34) spent less than one day per week hunting, 30 per cent (n = 16) spent one to
two days per week and only six percent spent two to three days per week hunting (Table 10). No one spent more than three days per week hunting. Forty-three percent (n = 41) of men and only 16 percent (n = 9) of women hunt. Chi-square testing shows a significant relationship between hunting and gender, \( \chi^2 (3, 152) = 13.99, p = 0.003 \), indicating that hunting is gender based, in favor of men.

Table 10: Time spent hunting

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>99</td>
</tr>
<tr>
<td>&lt; 1 day per week</td>
<td>34</td>
</tr>
<tr>
<td>1 to 2 days per week</td>
<td>16</td>
</tr>
<tr>
<td>2 to 3 days per week</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
</tr>
</tbody>
</table>

During the community group interviews, the residents in the Ulu mentioned that they used spears and dogs, and shotguns to hunt. Five longhouse residents (Rh. Kasi, Rh. Ngumbang, Rh. Griffin, and Rh. George) said that hunting success remains the same now as compared with the time before the dam was constructed (Table 11). Other longhouses responded differently. The Rh. Ipang resident said that it is less successful now. They said:

*Hunting was very successful before the dam, as people did not hunt to sell. After the dam was constructed, people hunted to sell and animals became scarce. Further, before the dam, there was no Pala Taong longhouse [Rh. Changging]; our hunting area stretches right up to Ng. Sumpa [Rh. Ngumbang]. Now we have to share the hunting area with people in Pala Taong longhouse so hunting has become less successful.*

The resident of Rh. Endan ascribed the lack of hunting success to the presence of outside hunters in the area. They said;
Fishing and hunting [success] was the same before and just after the construction of the dam as there were still a lot of fish [in the river] and wildlife in the forest. After the gazettement of the Park, there were a lots of outsiders coming to fish and hunt in this area. The Headman has no more authority to stop them, as it is now a National Park. Before it was a park, the Headman can stop them according to the longhouse regulations. These outsiders come to hunt but did not want to kill pests such as macaques which damage our farm. Today there are very few fish in the river.

Residents in Rh. Rumpang said no one in their longhouse hunts. This may be so as the resettlement scheme is situated in a rubber plantation. This is also the view of the residents in Rh. Betok. However, in Rh. Betok, there were two people who claim to fish and hunt in Ulu Batang Ai and reported that hunting is successful. The residents in Rh. Endan also claim that they never hunt. Their reason for not hunting was that they were too old to hunt.

Rh. Ayum is the only longhouse community that said that hunting in the Ulu is more successful these days compared with before BANP was gazetted (Table 11). This is contradicted by residents in Rh. Rimong who said that hunting is no longer successful. However, they said that they seldom hunt as travelling to Ulu Baya, their traditional hunting ground, is too costly.

All the residents indicated that they were aware of the Wild Life Protection Ordinances, 1998 and the ban on trade of wildlife. Three longhouse communities indicated that it had affected their income (see section 6.1.5). Only two longhouses indicated the existence of trade involving wildlife. For example, the Rh. Kasi spokesman said,

\[ \text{We hunt mainly wild pigs and sell it for money, as it is too much for us to consume.} \]
For the Rh. Endan longhouse it was an oblique reference to trade in wildlife. A spokesperson said,

*The only way we have wild meat is to buy it from the hunter in the next longhouse but this is very rare as we have very little money.*

Records of movement of local people made at the Ng. Lubang Baya Ranger Station indicated that some members of the Rh. Ayum community regularly hunt within the boundaries of the park. The residents in the other longhouses in the Ulu seldom hunt in the park. They mainly hunted in forest areas within an hour's walking distance from their longhouses. Thus, to enhance the conservation value of Batang Ai National Park, these forest areas next to the longhouses must be able to continue to buffer hunting pressure by local residents.

Dishes including wild pig meat were served by the residents of Rh. Kasi, Rh. Changging, Rh. Griffin, Rh. George in the Ulu and Rh Ayum in the resettlement scheme. No dishes of wild meat were served by residents of Rh. Endan in the Ulu, or Rh. Betok, Rh. Rumpang and Rh Rimong in the resettlement schemes.
## Table 11: Hunting methods (Based on data from community group interviews)

<table>
<thead>
<tr>
<th>Longhouse</th>
<th>Hunting methods</th>
<th>Hunted wildlife species</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rh. Kasi.</td>
<td>Dogs and spear, Shotguns</td>
<td>Wild pigs</td>
<td>Hunting success is the same as before.</td>
</tr>
<tr>
<td>Rh. Ngumbang.</td>
<td>Dogs and spear, Shotguns</td>
<td>Wild pigs, <em>Rusa, Kijang, Pelanduk, Musang</em></td>
<td>Hunting success is the same as before. Six <em>bilik</em> are active hunters.</td>
</tr>
<tr>
<td>Rh. Changging.</td>
<td>Dogs and spear</td>
<td>Wild pigs, <em>Rusa, Kijang, Pelanduk, Musang</em></td>
<td>We seldom went hunting, as we do not have hunting dogs.</td>
</tr>
<tr>
<td>Rh. Griffin.</td>
<td>Dogs and spear, Shotguns</td>
<td>Wild pigs, <em>Rusa, Kijang, Pelanduk, Musang</em></td>
<td>Hunting success remain the same as before.</td>
</tr>
<tr>
<td>Rh. Endan.</td>
<td>-</td>
<td>-</td>
<td>No one hunts.</td>
</tr>
<tr>
<td>Rh. Rimong.♦</td>
<td>Dogs and spear, Shotguns</td>
<td>Wild pigs, <em>Rusa, Kijang</em></td>
<td>We seldom hunt, as it is difficult to travel to Ulu Baya. Hunting is not successful.</td>
</tr>
<tr>
<td>Rh. Ayum.♦</td>
<td>Dogs and spear, Shotguns</td>
<td>Wild pigs, <em>Rusa, Kijang</em></td>
<td>Hunting [in the Ulu] is more successful these days as compared with before BANP was gazetted.</td>
</tr>
<tr>
<td>Rh. Rumpang. ♦</td>
<td>-</td>
<td>-</td>
<td>No one hunts.</td>
</tr>
<tr>
<td>Rh. George.</td>
<td>Spear and dogs, Shotguns</td>
<td>Wild pigs, <em>Rusa, Kijang, Pelanduk, Musang</em></td>
<td>Hunting is often successful</td>
</tr>
<tr>
<td>Rh. Ipang.</td>
<td>Spear and dogs, Shotguns</td>
<td>Wild pigs, <em>Rusa, Kijang, Pelanduk, Musang</em></td>
<td>Hunting is less successful</td>
</tr>
</tbody>
</table>

♦: Individual dwellings near Lubok Antu  
♦: Longhouses at Resettlement Schemes  
*Rusa* is Sambar deer, *Kijang* is Barking deer, *Pelanduk* is mouse deer and *Musang* is civets.
6.2.4 Fishing

Forty-nine per cent (n=75) of the individual respondents did not fish. Of those who fish, 61 per cent (n=47) spent less than one day per week fishing, 29 per cent (n=22) spent one to two days per week and five per cent spent more than three days per week fishing (Table 12). Sixty per cent (n=57) of men and 28 per cent (n=16) of women fish. Chi-square test shows a significant relationship between fish and gender, $\chi^2 (5, 152) = 24.9$ $p=0.000$, indicating that fishing is gender based, most often done by men.

Table 12: Time spent fishing

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>75</td>
<td>49.3</td>
</tr>
<tr>
<td>&lt;1 day per week</td>
<td>47</td>
<td>30.9</td>
</tr>
<tr>
<td>1 to 2 days per week</td>
<td>22</td>
<td>14.5</td>
</tr>
<tr>
<td>3 to 4 days per week</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>5 to 6 days per week</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Everyday</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

During the community group interviews, the residents in the Delok River system (Rh. Kasi, Rh. Ngumbang and Rh. Changging) and Rh. Ipang said that fishing success remained unchanged following the construction of the dam (Table 13). Residents of Rh. George and Rh. Betok claim that fishing is often successful while residents of Rh. Ayum said “fishing [in the Ulu] is more successful these days compared with before BANP was gazetted”. Contrary to the view of the residents above, three longhouse residents (Rh. Rimong, Rh. Griffin and Rh. Endan) mentioned that fishing is no longer successful. Rh. Rimong ascribed lack of fishing success to the difficulty of travelling to Ulu Baya while Rh. Griffin ascribed it to the lack of fishing equipment (pukat). Rh. Endan refers to the presence of outsiders fishing in the area as the main reason for lack of fishing success (see section 6.2.3).
Table 13: Fishing methods (Based on data from community group interviews)

<table>
<thead>
<tr>
<th>Longhouse</th>
<th>Fishing methods</th>
<th>Fish species</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rh. Kasi.</td>
<td>Jala, pukat</td>
<td>Kepiat, kulong, shrimps, pama</td>
<td>Fishing success is the same as before.</td>
</tr>
<tr>
<td>Rh. Ngumbang.</td>
<td>Pukat, Jala</td>
<td>Kepiat, kulong, shrimps, pama</td>
<td>Fishing success is the same as before.</td>
</tr>
<tr>
<td>Rh. Changging.</td>
<td>Pukat, Jala</td>
<td>Tengadak, Kepiat, kulong, shrimps, pama</td>
<td>Fishing success remain the same as before.</td>
</tr>
<tr>
<td>Rh. Griffin.</td>
<td>Jala</td>
<td>Kepiat, kulong, shrimps, pama</td>
<td>Fishing is not successful, as we do not have pukat.</td>
</tr>
<tr>
<td>Rh. Endan.</td>
<td>Jala, pukat</td>
<td>Kepiat, kulong</td>
<td>We spend very little time fishing. Fishing is not successful.</td>
</tr>
<tr>
<td>Rh. Rimong. ♦</td>
<td>Jala, Pukat</td>
<td>Kepiat, Kulong, shrimps, pama</td>
<td>We seldom fish, as it is difficult to travel to Ulu Baya. Fishing is no longer successful.</td>
</tr>
<tr>
<td>Rh. Ayum. ♦</td>
<td>Jala, Pukat</td>
<td>Semah, Kepiat, Kulong, shrimps, pama</td>
<td>Fishing [in the Ulu] is more successful these days as compared with before BANP was gazetted.</td>
</tr>
<tr>
<td>Rh. Rumpang. ♦</td>
<td></td>
<td></td>
<td>No one fishes. We purchase most of our needs from town.</td>
</tr>
<tr>
<td>Rh. Betok. ♦</td>
<td>Pukat, Jala</td>
<td>Semah, Kepiat, Kulong, shrimps, pama</td>
<td>Only two people still fish and hunt. Fishing in the Ulu is successful.</td>
</tr>
<tr>
<td>Rh. George.</td>
<td>Pukat, Jala</td>
<td>Tengadak, Kepiat, Baung</td>
<td>Fishing is often successful</td>
</tr>
<tr>
<td>Rh. Ipang.</td>
<td>Jala, Pukat</td>
<td>Tengadak, Kepiat, Ikan merah*</td>
<td>Fishing success remain the same as before.</td>
</tr>
</tbody>
</table>

♦: Individual dwellings near Lubok Antu
♦: Longhouses at Resettlement Schemes
*: Caged fish species, not found locally.
Jala: casting net, Pukat: gill nets.
Kepiat, Kulong, Tengadak are local fish species and pama is an edible frog.
Fishing in Ulu Batang Ai is physically less demanding, does not require the level of skills required for hunting and is often done as a side activity. Fishing might involve a highly organised trip or be a side activity during farming trips, involving setting a gillnet in the river, leaving it overnight and collecting the catch the next day. Fishing is a more important activity than hunting, in that more people fish than hunt, and more people spend more time fishing than hunting (Table 14). In Ulu Batang Ai, “fish ...[is] the main source of protein for the community” (Yong and Basiuk, 1998; p.5).

During the survey, except for Rh. Endan, all the longhouses in the Ulu served wild fish dishes during our meals with the residents. In the case of Rh. Endan they served wild vegetable plus food that we had brought for them. The longhouses in the resettlement schemes did not serve any dishes containing wild fish.

Table 14: Time spent fishing with time spent hunting

<table>
<thead>
<tr>
<th>Time spent fishing per week</th>
<th>Time spent hunting per week</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>&lt; 1 day</td>
</tr>
<tr>
<td>Not at all</td>
<td>70</td>
<td>6</td>
</tr>
<tr>
<td>&lt; 1 day</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>3 to 4 days</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5 to 6 days</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Everyday</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

Seventy-six per cent (n=116) spent less than one day or do not hunt and fish (shaded gold)

6.2.5 Other work

“Other work” refers to a range of activities outside of the mainstream occupation of farming (see Table 16). Forty-five per cent (n=69) of the respondents did not engage in other work. Of those who did, 49 per cent (n=41) spent less than one day per week, 25 per cent (n=21) spent one to two days per week, five per cent (n=4) three to four days per week, 17 per cent (n=14) spent five to six days per week and only four per cent (n=3)
spent everyday of the week (Table 15). Fifty-nine per cent (n=56) of men and 47 per cent
(n=27) of women did other work. A Chi-square test shows no significant relationship
between participating in other work and gender, $\chi^2 (5, 152) = 10.1$, n.s.

Table 15: Time spent doing other work

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>69</td>
</tr>
<tr>
<td>Less than 1 day per week</td>
<td>41</td>
</tr>
<tr>
<td>1 to 2 days per week</td>
<td>21</td>
</tr>
<tr>
<td>3 to 4 days per week</td>
<td>4</td>
</tr>
<tr>
<td>5 to 6 days per week</td>
<td>14</td>
</tr>
<tr>
<td>Everyday</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
</tr>
</tbody>
</table>

All respondents that reported participating in ‘other work’ were requested to specify the
type of ‘other work’. They were also requested to indicate if the work was related to
tourism. Types of ‘other work’ were grouped into six categories (Table 16).

Table 16: Categories of ‘other work’ types

<table>
<thead>
<tr>
<th>Category of work</th>
<th>Types of work</th>
</tr>
</thead>
<tbody>
<tr>
<td>No other work</td>
<td>Did not report doing other work.</td>
</tr>
<tr>
<td>Tourism [transport]</td>
<td>Boat drivers and front-men for transporting tourists</td>
</tr>
<tr>
<td>Tourism [other service]</td>
<td>Other tourism services e.g. guide, cook, helper, and cultural performances.</td>
</tr>
<tr>
<td>Homecraft [weaving]</td>
<td>Homecraft such as mats, baskets and <em>puu kumbu</em>.</td>
</tr>
<tr>
<td>Homecraft [others]</td>
<td>Work including build and repair boats, making handicrafts, making <em>parang</em>.</td>
</tr>
<tr>
<td>Government jobs</td>
<td>Working in government departments e.g. Batang Ai National Park and school teachers.</td>
</tr>
<tr>
<td>Others</td>
<td>Others includes business men, contract workers and plantation workers.</td>
</tr>
</tbody>
</table>

*Puu Kumbu* is a local woven textile; *parang* is a long knife.
Of those who reported participating in other work, 28 per cent (n=23) were involved in tourism related work, 45 per cent (n=37) involved in various types of homecraft and 28 per cent (n=23) were work related to their jobs in the national park, other government departments, contract work or were self-employed (Table 17). Within tourism related work, transportation was the most popular. This is consistent with findings by Jihen (2001) that transportation is the main tourism related work handled by local longhouse residents.

Table 17: Types of work recorded as ‘other work’

<table>
<thead>
<tr>
<th>Types of Work</th>
<th>Frequency</th>
<th>Per cent</th>
<th>Percent of those reporting ‘other work’ (n=83)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No other work</td>
<td>69</td>
<td>45.4</td>
<td>-</td>
</tr>
<tr>
<td>Tourism [transport]</td>
<td>17</td>
<td>11.2</td>
<td>20.5</td>
</tr>
<tr>
<td>Tourism [other service]</td>
<td>6</td>
<td>3.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Homecraft [weaving]</td>
<td>14</td>
<td>4.0</td>
<td>16.9</td>
</tr>
<tr>
<td>Homecraft [others]</td>
<td>23</td>
<td>15.1</td>
<td>27.7</td>
</tr>
<tr>
<td>Government jobs</td>
<td>11</td>
<td>7.2</td>
<td>13.2</td>
</tr>
<tr>
<td>Others</td>
<td>12</td>
<td>7.9</td>
<td>14.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Tourism related work was recorded among residents of Rh. Ngumbang, Rh. Changging and Rh. Ipang. The majority of those reporting participating in work related with tourism were from Rh. Ngumbang. All the government jobs were reported among those working in Batang Ai National Park except for a teacher who resided in Rh. Ipang (Fig. 9). Chi-square test shows a highly significant relationship between locations with types of works, $\chi^2 (66,152) = 282.15$, $p=0.000$, and between ‘Tourism Longhouses Categories’ with types of works, $\chi^2 (12,150)=72.73$, $p=0.000$. This is expected, as the residents of ‘tourist longhouses’ were involved with tourism related work while those in the ‘non-tourist longhouses’ were involved with other types of work such as homecraft.
6.2.6 Summary of section

Eighty-five per cent of the respondents were farmers and only six per cent did not work on a farm. Nine per cent of the non-farmers spent some time working on the family farm. All the residents in longhouses in Ulu Batang Ai still practised traditional slash and burn, shifting agriculture. Those in the resettlement schemes practised modern methods of farming, some involving planting of wet rice in the same plot of land every year. They used fertilizers and herbicides to increase yield. All residents farmed in areas within an hour’s walking distance from their longhouses. During the survey, Rh. Endan was the only longhouse farming within the boundaries of Batang Ai National Park. Other longhouses -- Rh. Ayum, Rh. Rimong, Rh. Rumpang and Rh. Betok claim native customary land (NCL) within the boundaries of the Park; however, they did not farm these areas as it was costly to travel to the Ulu. Those in the Ulu gave a mixed response to the question of farming success, some mentioned that it remained the same while others said that it is no longer successful. The main reasons for lack of success were lack of men to farm and damage by wildlife.
A majority of respondents participated in harvesting forest produce. Both men and women participated in harvesting. Forest products for food such as mushrooms, fern leaves, and ‘heart’ of palms were the most commonly harvested. Other forest produce harvested by residents in the Ulu includes building materials, rattan and fruits. All residents of longhouses in Ulu Batang Ai mentioned that success in harvesting forest produce remains the same as before. They collect forest produce in forest areas next to their longhouses. They do not need to collect forest produce from within the boundaries of the park as the forest areas next to their longhouses are able to provide them with their daily requirements. Residents in the resettlement schemes including Rh. Rimong in Lubok Antu mentioned that harvesting forest produce is no longer feasible. This is expected as there was little forest near to the resettlement schemes and travelling to the Ulu is very expensive, often beyond the reach of most. Even though there were a number of residents that claim traditional rights to collect forest produce within the boundaries of Batang Ai National Park, Rh. Endan was the only longhouse that exercised its rights.

Hunting was mainly done by men. Hunting methods used were dogs and spears, and shotguns. Except for the residents of Rh. Ipang who said that hunting is not successful, most of the residents in Ulu Ai mention that hunting success remains the same now as before the construction of the dam. The residents of Rh. Ayum held the different view that hunting in the Ulu has been more successful since Batang Ai National Park was gazetted. The main species hunted included wild pigs, sambar deer, barking deer, mouse deer and civets. Except for some members of Rh. Ayum, the longhouses residents in the Ulu seldom hunt in the park. They mainly hunted in forest areas within an hour’s walking distance from their longhouses. Thus, it is crucial that the forest areas outside the park be able to sustain hunting pressure by local residents in order to enhance the conservation value of Batang Ai National Park.

Fishing is also most often done by men. Gill net and cast net were the main methods of fishing. Fishing success remains the same in the Ulu. However, Rh Endan and Rh. Griffin mentioned that fishing is no longer productive. Rh. Endan attributed the lack of success to over-fishing by outsiders, while Rh. Griffin attributed it to lack of fishing equipment.
Residents in the resettlement schemes, however, mention that they seldom or never fish as it is very difficult to travel to the Ulu. Furthermore, the resettlement schemes were sited away from main rivers. The main species of fish taken were *kepiat*, *kulong*, shrimps and frogs. Fishing is physically less demanding than hunting and does not require the level of skills required for hunting. It is often done as a side activity. Fishing is a more important activity than hunting, in that more people fish than hunt, and more people spend more time fishing than hunting, and fish constitute a larger percentage of the diet of most residents.

Less than half of the respondents reported participating in ‘other work’. The majority spent less than one day per week doing ‘other work’. The residents of Rh. Ngumbang listed work related to tourism such as transportation, helper, cook, and cultural performances. Transportation is the most common tourism related work. Those in other longhouses specified ‘other work’ with homecraft such as weaving baskets or *pua kumbu*, building or maintenance of boats or house, and making *parang*. A number of respondents in the resettlement schemes specified ‘other work’ as contract work, rubber tapping and operating a business. All those from Batang Ai National Park specified ‘other work’ as their jobs in the Park.
6.3 KNOWLEDGE, CONTACTS, ATTITUDES, IMPACTS AND BELIEFS ABOUT TOURISM

Respondents' knowledge, contacts with tourists, attitudes, impacts of, and beliefs about, tourism are presented in this section. Chi-square tests are performed to determine levels of association between certain key characteristics. A short summary is presented at the end of this section.

6.3.1 Knowledge of tourism

Tourism is a form of leisure involving time of at least a night away from home, or a distance of at least 50 km away, which requires a physical withdrawal from one's normal residential region as in domestic tourism, or country, as in international tourism (Simmons and Leiper, 1998). It is "... best seen as time over which an individual exercises choice and undertakes an activity in a free, voluntary way" (Hall and Page, 1999; p.3). It is an activity that offers a contrast to work-related activities.

In Iban, 'temuai' is used to describe any visitor other than people originally from their own longhouse. The respondents were asked to define 'tourist' in order to determine their understanding of the term. Forty-one per cent (n=75) defined 'tourist' as anybody not from their own longhouse while 51 per cent (n=77) equated tourist with foreigner. For the purpose of this thesis, tourist means any visitors from outside Lubok Antu District who did not partake in any kind of work during that visit. In all cases, the respondents were informed of the definition of 'tourist' before further questions were asked.

6.3.2 Contacts with tourists

Of the total respondents surveyed, 21 per cent (n=33) had never had contact with tourists, 28 per cent (n=43) rarely had contact, 32 per cent (n=49) had a few contacts per month and 18 per cent (n=27) had several contacts per week (Table 18). A Chi-square test shows a highly significant relationship between contact with tourists and location, $\chi^2 (33,152) = 174.1$, $p=0.000$, confirming that some longhouses had more contact than others.
Table 18: Contact with tourists

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Frequency</th>
<th>Per cent</th>
<th>Per cent with contact (n = 119)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several times a week</td>
<td>27</td>
<td>17.8</td>
<td>22.7</td>
</tr>
<tr>
<td>A few times a month</td>
<td>49</td>
<td>32.2</td>
<td>41.2</td>
</tr>
<tr>
<td>Rarely</td>
<td>43</td>
<td>28.3</td>
<td>36.1</td>
</tr>
<tr>
<td>Never</td>
<td>33</td>
<td>21.7</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Except for one person from Rh. Endan, residents of longhouses in the Ulu (Rh. Ngumbang, Rh. Kasi, Rh. Changging, Rh. Griffin and Rh. Endan) indicated that they had had some contact with tourists (Fig. 10). All respondents in Batang Ai National Park (BANP) had had some contact with tourists. A large majority of respondents of Rh. Ngumbang had contacts with tourists several times per week. During the community group interviews, residents of Rh. Ngumbang reported that they had an average of 12 visits per month. They reported that tourists were mainly 'orang putih'\(^{21}\) from England, America, Switzerland, Denmark, Sweden, Holland, Belgium, Italy, Germany, and some Asians from Japan, China, India and the Philippines. In other longhouses in the Ulu, a majority had a few contact per month, or rarely had contact with tourists. For example, a speaker for the Rh. Changging resident said,

This year we did not have any tourists visiting our longhouse. In the past, there were a few visits, mainly 'orang putih' and some Japanese. We do not know where the 'orang putih' came from.

The residents of Rh. Endan had experience with tourism in their longhouse in the early 1990s when Borneo Adventure were conducting package tours to their longhouse. They referred to tourists as 'orang putih' from Germany, England, America and Sweden. They said,

\(^{21}\) Orang putih: Literally means white men and refers to any Caucasian.
In 1990 to 1992 there was an average of two tourists per month [visiting our longhouse] but after that there were no more tourists.

In contrast to those living in the Ulu, some respondents from resettlement schemes including Rh. Rimong in Lubok Antu indicated that they never had contact with tourists (Fig. 10). During the community group interviews all these longhouse residents said “no tourists come to this longhouse”. Those who reported having contact with tourists had contact in places other than their longhouse, for example at the boat jetty, in town and in Batang Ai National Park.

**Figure 10: Residents contact with tourists in various locations**

![Graph showing contact with tourists in various locations]

6.3.3 Places where respondents were most likely to meet tourists (Table 19)

Fifty-one per cent (n=61) of respondents that had contact with tourists reported that the most likely place for them to meet tourists is at their longhouse. The next most likely place to meet tourists is at Batang Ai National Park (19 %) followed by at Wong Irup (jelatong), the boat landing point at the hydroelectric dam site (15 %). Only eight
respondents (7%) mention the Hilton Longhouse Resort as the most likely place to meet tourists. The low percentage mentioning the Hilton Longhouse Resort as a place where they are most likely to meet with tourists is because the longhouses in the study sites seldom or never visit Hilton Longhouse Resort.

Table 19: Places where respondents were most likely meet tourists

<table>
<thead>
<tr>
<th>Place</th>
<th>Frequency</th>
<th>Per cent</th>
<th>Per cent with contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>At work</td>
<td>3</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>At longhouse</td>
<td>61</td>
<td>40.1</td>
<td>51.3</td>
</tr>
<tr>
<td>At Wong Irup (jelatong)</td>
<td>18</td>
<td>11.8</td>
<td>15.2</td>
</tr>
<tr>
<td>At Lubok Antu</td>
<td>3</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>At Hilton Longhouse Resort</td>
<td>8</td>
<td>5.3</td>
<td>6.7</td>
</tr>
<tr>
<td>At Batang Ai National Park</td>
<td>23</td>
<td>15.1</td>
<td>19.3</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119</strong></td>
<td><strong>78.3</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>No Contact*</td>
<td>33</td>
<td>21.7</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Wong Irup is the boat landing point at the hydroelectric dam.
*Refers to respondents who did not have contact with tourists and thus did not answer this question.

A Chi-square test shows a highly significant relationship between places where respondents are most likely meet tourists and location, $\chi^2 (66,119) = 216.1$, $p=0.000$, indicating that the places where respondents are most likely meet with tourists is dependent upon location. Fig. 11 shows that all respondents of Rh. Ipang and Rh. Ngumbang reported that the most likely place to meet tourists is their longhouse. This is supported by the fact that Borneo Adventure conducted tours to Rh. Ngumbang and the Hilton Longhouse Resort brings tourists to Rh. Ipang. Residents in the resettlement schemes reported that the most likely places to meet tourists were Batang Ai National Park, Hilton Longhouse Resort, Wong Irup and other places but not their longhouses (Fig. 11).
6.3.4 Tourist seasons in Batang Ai

Tourism in Ulu Batang Ai is non-seasonal. Eighty-one per cent (n=68) of respondents who answered the question indicated that there is no distinct period for tourist visits to their longhouse. Only nineteen per cent (n=16) reported that there were certain months in which they expected to meet tourists (Table 20).

Table 20: Month when respondents were most likely to meet tourists

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Per cent</th>
<th>Per cent of those who responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>November to January</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>February to April</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>May to July</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>August to October</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Non-seasonal</td>
<td>68</td>
<td>44.8</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>55.3</td>
</tr>
<tr>
<td>No response*</td>
<td>68</td>
<td>44.7</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Refers to respondents who did not answer the question. These respondents were those who did not have contact with tourists and those from longhouses without tourist visits.
Rh Ngumbang, the longhouse that had the most contacts with tourists (see item 6.3.2) reported that tourist visits to their longhouse are non-seasonal. Those who reported seasonal visitations were mainly from longhouses that had very few tourists visit (Rh. Kasi, Rh. Griffin and Rh. Changging). In these instances respondents may have reported the month that they have had contact with tourists rather than the peak tourist season.

6.3.5 Tourist spending and purchases in Longhouses

The questions on how much is spent by tour operators and tourists in their longhouse, and how much is spent by tourists on the purchasing of goods and services, were observed to be very challenging for the respondents. Most often the immediate response by the respondents was 'nak nemu' which means 'I don't know'. However, all respondents provided answers when they were requested to give an estimated value of what they thought was spent or purchased by the tourists in their longhouse. For this reason, the analysis here may not reflect the actual values of tourist expenditure and purchases but rather the values as perceived by the respondents. Values reported by respondents of Rh. Ngumbang were used to determine the validity of reports by comparing them with findings of past research on longhouse expenditure, for example, Antang (2001) and Jihen (2001). Information from the community group interviews is used to support or complement the quantitative data.

6.3.5.1 Tourist spending in longhouses

Forty-two per cent (n=35) of those who answered the question reported that tourists spent less than RM 100 per month in their longhouse. Another 27 per cent (n=23) said that tourists spent between RM 101 and RM 500 and only 19 per cent (n=16) reported that tourists spent more than RM 2,000 per month in their longhouse (Table 21).
Table 21: Tourist spending per month

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Per cent</th>
<th>Per cent of those who responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; RM 100</td>
<td>35</td>
<td>23.0</td>
</tr>
<tr>
<td>RM 101 to RM 500</td>
<td>23</td>
<td>15.1</td>
</tr>
<tr>
<td>RM 501 to RM 1,000</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td>RM 1,001 to RM 1,500</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>RM 1,501 to RM 2,000</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>&gt; RM 2,001</td>
<td>16</td>
<td>10.6</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>55.3</td>
</tr>
</tbody>
</table>

No response* 68 44.7

Total 152 100.0

*Refers to respondents who did not answer the question. These respondents were those that did not have contact with tourists and those from longhouses without tourist visits.

Chi-square testing showed a highly significant relationship between tourist spending and 'Tourist Longhouses Categories', $\chi^2 (10,82)=37.62, p=0.000$. This indicates that tourist spending is about the same in all other locations except in Rh. Ngumbang.

The above analysis (Fig. 12) showed that residents of Rh. Ngumbang reported that tourists spent more than RM 500 per month in their longhouse. All those that reported that tourists spent more than RM 2,000 per month in their longhouse were also from Rh. Ngumbang. Rh. Ipang is the only other longhouse where the respondents reported that tourists spent more than RM 500 per month in their longhouse. This is expected as Rh. Ngumbang received tourists through their co-operation with Borneo Adventure and Rh. Ipang received tourists brought in by the Hilton Longhouse Resort while the other longhouses received very few tourists.
The mean value of tourist spending in Rh. Ngumbang is RM 12,252 per month, equivalent to RM 147,024 per year. This concurs with findings by Antang (2001) where in the year 2000 Rh. Ngumbang received RM 153,000 from tourism. Dividing this amount among the thirty *biliks* in Rh. Ngumbang, each *bilik* would receive RM 421 per month. This amount is within the income bracket of most of the respondents in Rh. Ngumbang. In Rh. Ipang the mean value of tourist spending is RM 333.3, which is about RM 4,000 per year. In longhouses with few tourists, the mean value of tourist spending is less than RM 100 per month.

**6.3.5.2 Tourist purchases in longhouses**

Tourist purchases refers to the amount of money spent by tourists on various goods and services. The values reported were the cost per unit of items or services. The modal value reported in Table 22 showed the cost of goods and services as reported by the highest number of respondents. The cost of handicrafts (souvenirs) ranges from RM 5 to RM 600, the average cost being RM 50. Handicrafts include wooden carvings, beads, mats, baskets, long knives and *pua kumbu* (a local textile). Among them all, *pua kumbu* often
fetches the highest price, as it takes a long time and requires special skills to weave. The cost of food and drink may range up to RM 50 for a bottle of ‘tuak’ (local rice wine), plus vegetables, fish (caged fish) and occasionally, chicken. The large variation recorded is because some groups bring all their food and only buy tuak.

Guiding fees cost RM 8 to RM 70, the average being RM 15. Short trips along trails at the back of the longhouse cost RM 8 and longer over-night trips may cost RM 70. Guiding fees for day trips cost RM 15. Cultural performances fetch between RM 5 and RM 50 with the median being RM 8 per performance. Cultural performances include ‘ngajat’ (dances), ‘tabuh’ (music) and ‘miring’ (rituals). During the community group interviews, Rh. Ngumbang reported that a cook was paid RM 12 per day and his/her assistant was paid RM 6 per day regardless of the number of visitors.

Boat hire refers to the cost of a round trip inclusive of fuel, and wages for the boat-hand. The cost of boat hire ranges from RM 30 to RM 280, depending on the distance of the trip. During the community group interviews, Rh. Ngumbang reported that a return trip from the pick up point at the dam (Wong Irup) to Rh. Ngumbang cost RM 200. A return trip from Rh. Ngumbang to the waterfall up river at Wong Seluai cost RM 110. Even though hire of the boat is inclusive of fuel and wages of boat-hands, some respondents did report the cost of fuel and their wages separately. The cost of fuel ranges from RM 7 to RM 100, which is equivalent to one gallon (4.5 litres) to fourteen gallons. The cost per gallon of fuel at the time of the survey, was RM 7. The wages of a boat-hand range from RM12 to RM 50 with a mode of RM 25, depending on the time required for the trip (Table 22). The wages of boatmen are RM 25 per day and for a front-man (navigator) is RM 12.

Other purchases reported were payment for entering their ‘bilik’ and tips given by tourists. For example, during the community group interviews with Rh. Endan, they said,

They [tourists] paid us RM 5 for entering our ‘bilik’. They did not pay us for taking photographs with us.
Other purchases also refer to ‘head tax’ or fees paid by tourist for visiting longhouses. For example, the residents of Rh. Changging said,

Tourists should pay [for entering our longhouse] as they get satisfaction from viewing our longhouse and us. This fund should be paid to the headman which could be used for the improvement and maintenance of the longhouse. We charged RM 7 [per person] for head tax here.

Table 22: Tourist purchase of goods and services (N=152)

<table>
<thead>
<tr>
<th></th>
<th>Boat Hire</th>
<th>Fuel</th>
<th>Boat hand</th>
<th>Food and drink</th>
<th>Guide</th>
<th>Souvenirs</th>
<th>Performances</th>
<th>Other purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>67</td>
<td>34</td>
<td>40</td>
<td>49</td>
<td>46</td>
<td>56</td>
<td>58</td>
<td>11</td>
</tr>
<tr>
<td>No response*</td>
<td>85</td>
<td>118</td>
<td>112</td>
<td>103</td>
<td>106</td>
<td>96</td>
<td>94</td>
<td>141</td>
</tr>
<tr>
<td>Mean</td>
<td>189.25</td>
<td>53.29</td>
<td>25.63</td>
<td>10.65</td>
<td>25.37</td>
<td>120.36</td>
<td>15.31</td>
<td>18.18</td>
</tr>
<tr>
<td>Median</td>
<td>200.00</td>
<td>50.00</td>
<td>25.00</td>
<td>10.00</td>
<td>21.00</td>
<td>50.00</td>
<td>8.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Mode</td>
<td>200</td>
<td>50</td>
<td>25</td>
<td>10</td>
<td>15</td>
<td>50</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Minimum</td>
<td>30</td>
<td>7</td>
<td>12</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Maximum</td>
<td>280</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>70</td>
<td>600</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

*Refers to respondents who did not answer the question.

Transportation is regarded as the most important tourism related work for the lonhouse residents in Ulu Batang Ai. Sale of souvenirs is the next most important activity followed by sale of food and drink (tuak). Work as cook and helper come last, probably due to their low pay compared with other services. The Chairman of the Tourism Committee, Ng. Sumpa pointed out the importance of tourism related work and said,

So, first, [most important] we benefited from our boat; second, from the sale of handicrafts; third, from the sale of ‘tuak’ and fourth, we gained from working as a kitchen helper, as a cleaner, as porter. Sometimes the visitors to the longhouse
also gave donations to the longhouse; sometimes they donated RM 500, some RM 1,000 sometimes. This was not often, it depended on the group. In a year there were two or three times in which we received donations and these went to the longhouse fund.

Transporting tourists is the most common work in Ulu Batang Ai involving the greatest number of people. It also brought in the highest amount of money per unit activity (Table 22). Thus, it is not surprising that the residents in Ulu Batang Ai regarded it as the most important tourism related work. Even though the amount of money received from transportation related work is higher than other work, the net return may not be much after subtracting the cost of fuel, and depreciation of boat and engine.

6.3.6 Attitudes toward tourism

Tourism produces both positive and negative impacts in host communities. The levels of these impacts vary depending on the socio-cultural structure of the country and the level of tourist developments (Mathieson and Wall, 1982; Hall, 1993). The changes produced by tourist developments affect people’s habits, daily routines, social beliefs, and values (Dogan, 1989; Mathieson and Wall, 1982; Zeppel 1997a). These changes affect the attitude of host communities toward tourism.

To determine the attitudes of longhouses communities in Batang Ai toward tourism, they were asked the levels of tourist numbers they would like to see (tourist arrivals) and the levels of personal contact they would like to have with tourists. They were also asked why they would like to have such level of contact with tourists.

6.3.6.1 Levels of tourist arrivals and personal contacts

Four levels of tourist arrivals and personal contacts were used, i.e. more, same as present, less, or not at all. Twenty-one per cent (n=33) of respondents that had no previous contact with tourists did not answer these questions – recorded as no response (Fig. 13). Of those who reported having previous contacts with tourists, 98 per cent (n=117) would like to
see more tourist arrivals as well as have more personal tourist contacts. Only two per cent (n=2) would like to have the same level of tourist arrivals and personal contacts.

**Figure 13: Level of personal contact with tourist (N=152)**

![Pie chart showing levels of personal contact with tourists](image)

No response refers to respondents who reported having no contact with tourists.

### 6.3.6.2 Reasons for wanting an increase in contacts with tourists

Two main themes were observed as reasons for wanting more, or the same, level of contacts with tourists. They were ‘can sell handicrafts’, ‘tourists pay us for transport and other services’, ‘provide jobs for longhouse people’, ‘tourists bring money to us’ and ‘tourists bring benefits to us’. Reasons associated with all the above were bundled as ‘benefits from tourism’ referred to as ‘benefits’ in Fig. 14. Seventy-five per cent (n=89) of those who had had contacts with tourists mentioned ‘benefits’ as the reason for wanting more contact with tourists.

The other theme was associated with knowledge and exchange of ideas, referred to as ‘Exchange ideas’ in Fig. 14. This includes reasons such as ‘we can gain knowledge from tourists’, ‘we can exchange ideas’, ‘tourists bring in information about their country’, and ‘we can learn from them’. Thirteen per cent (n=16) of those who had had contact with tourists mention that ‘exchange of ideas’ is their reason for wanting more contact.

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with tourists. Where respondents mentioned both ‘benefits’ and ‘exchange of ideas’, they are abbreviated to ‘Ben & Exc Ids’ in Fig. 14. Only eight per cent (n=10) of those who had had contact with tourists mentioned both benefits and exchanges of ideas as their reasons for wanting more contacts with tourists.

Other reasons were categorised as ‘Others’ in Fig. 14. These include ‘tourists bring about development, and improvements, to this area’ and ‘I love to meet foreigners’. The reason for wanting the same level of contact with tourists (Item 6.3.6.1) was ‘because we have a lot of other work’.

**Figure 14: Reasons for increase in contacts with tourist (N=152)**

No response refers to respondents who reported having no contact with tourists.

### 6.3.7 Employment from tourism

“Tourism can bring many benefits, by creating employment, stimulating economies and social welfare, generating foreign exchange, providing improvements to transport infrastructures, and creating recreational facilities and services” (Ceballos-Lascurain, 1991; p.31). “In practice, … local populations are often unable to provide the services that foreign tourists demanded or are not contracted to do so, leaving large tourism
operators with neither competition, nor the incentive to distribute the wealth” (Yu, Hendrickson and Castillo, 1997; p. 130).

To explore these ideas, various questions were directed at local communities in the study site. Those who had had contact with tourists were asked if they have ever worked for tourism, types of work undertaken, whether full-time or part-time, seasonal or permanent and which month, and how much payment was received for the work.

### 6.3.7.1 Work with tourism
Seventy-seven per cent (n = 92) of respondents who had had contact with tourists have worked with tourism, 23 per cent (n = 27) have never worked with tourism. All the work was part-time and non-seasonal. Ninety-nine per cent (n = 91) were paid for their work. Only one person reported not being paid for work related tourism. He happened to be employed in Batang Ai National Park and may have performed the work as part of his official duties.

### 6.3.7.2 Types of tourism related works
The types of work were divided into five categories. Work involving transportation, such as driving and acting as front-men (navigating) was categorised under ‘transport’. Cooking, kitchen helpers and housekeeping were categorised under ‘accommodation’. Cultural performances, rituals and welcoming were categorised under ‘performance’. The other two categories were guiding and any other work is referred to as ‘other’. Among those who had worked with tourism, 42 per cent were involved in transportation, 22 per cent in accommodation, 18 per cent in cultural performances and 16 per cent in guiding (Table 23). Only one respondent reported other work, which was a job in a hotel as reported by one of the respondents from Rh. Betok, Skrang. Among residents in Batang Ai, transportation is the most common tourism work, followed by accommodation, performances and guiding.
### Table 23: Work types

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Frequency</th>
<th>Per cent</th>
<th>Per cent who had worked with tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>39</td>
<td>25.6</td>
<td>42.4</td>
</tr>
<tr>
<td>Accommodation</td>
<td>20</td>
<td>13.1</td>
<td>21.7</td>
</tr>
<tr>
<td>Performance</td>
<td>17</td>
<td>11.2</td>
<td>18.5</td>
</tr>
<tr>
<td>Guide</td>
<td>15</td>
<td>9.9</td>
<td>16.3</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>92</strong></td>
<td><strong>60.5</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*No response* 60 39.5

**Total** 152 100.0

*Refers to respondents who had never worked with tourism.

### 6.3.7.3 Pay received for work related to tourism

Most of the work related to tourism in Ulu Batang Ai is low paying with 67 per cent (n = 61) receiving less than RM 100 per month. Thirty-one per cent (n = 28) received between RM 101 and RM 500 per month (Table 24).

### Table 24: Pay received for work related to tourism

<table>
<thead>
<tr>
<th>Pay Range</th>
<th>Frequency</th>
<th>Per cent</th>
<th>Per cent who had worked with tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;RM 100 per month</td>
<td>61</td>
<td>40.1</td>
<td>67.0</td>
</tr>
<tr>
<td>RM 101 to RM 500 per month</td>
<td>28</td>
<td>18.4</td>
<td>30.8</td>
</tr>
<tr>
<td>RM 501 to RM 1,000 per month</td>
<td>1</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>RM 1,001 to RM 1,500 per month</td>
<td>1</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
<td><strong>59.9</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*No response* 61 40.1

**Total** 152 100.0

* Refers to respondents who had never worked with tourism.
Fig. 15 shows that payment per month for the various types of work related to tourism in Ulu Batang Ai is below RM 500 per month. More respondents receiving between RM 101 and RM 500 did so from transportation. Guiding could fetch higher pay, however, only one person reported earning between RM 501 to RM 1,000 per month. The highest pay received was for work in a hotel as reported by someone in Rh. Betok, Skrang, and not related to tourism work in Batang Ai.

**Figure 15: Pay received by work types**

A Chi-square test shows a highly significant relationship between pay received and location, $\chi^2 (33,91) = 81.99$, $p = 0.000$, indicating that payment for the various types of jobs is dependent on location. Fig.16 shows that more respondents in Rh. Ngumbang received over RM 100 per month more than the other locations. However, there is no significant relationship between pay received for type of work and ‘Tourism Longhouses Categories’, $\chi^2 (6,90)=7.29$, n.s. This indicates that payment received for work related to tourism is not dependent on the volume of tourists visiting the longhouses.
6.3.8 Impacts of tourism

Mathieson and Wall (1982) postulate that tourism produces both positive and negative effects in local communities, but their respective levels vary depending on the socio-cultural structure of the country and level of touristic development. Various combinations of response strategies may exist simultaneously within a region, but initial responses during the early stages of tourism tend to be more homogeneous, particularly if the community is rural-based and homogenous itself (Wall, 2000).

To determine the level of effects of tourism on local communities, respondents were asked what they most liked and disliked about tourism. All respondents, including those that reported that they had no contact with tourists were asked these questions. The main reason for their inclusion was that they might have heard from others, or from the mass media the advantages or disadvantages of tourism.
6.3.8.1 Most liked about tourism

Two main themes were observed as the ‘most liked’ about tourism. They were categorised as ‘Benefits from tourism’ and ‘Exchange knowledge’. Other reasons were few and were categorised as ‘Others’ (Table 25). Comments such as ‘can sell handicrafts’, ‘provides jobs for longhouse people’, ‘tourists bring money to us’, ‘can sell rice wine’ and ‘tourists bring benefits to us’ were categorised under ‘Benefits from tourism’. Sixty-three per cent (n=96) of respondents reported ‘benefits’ as being most liked about tourism.

The other theme was associated with knowledge and exchange of ideas, referred to as ‘Exchange knowledge’ in Table 25. This includes reasons such as ‘we can gain knowledge from tourists’, ‘we can exchange ideas’, ‘tourists bring in information about their country’, and ‘we can learn from them’. Twenty-five per cent (n=38) of respondents reported ‘exchange of ideas’ as the most liked about tourism.

Other reasons were categorised as ‘Others’. Twelve per cent (n=18) gave various reasons as advantages of tourism. These included ‘tourism brings about development to Batang Ai’, ‘tourism brings more people to our longhouse’, ‘we can show our traditional performances to foreigners’, ‘tourists love to have fun -- happy people’, ‘we can practise our traditional dances’ and ‘opportunity to mix/ meet with people from other countries’. There were two respondents that commented ‘no advantage, we do not have experience as no tourists come to our longhouse’.

Table 25: Most liked about tourism

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange knowledge</td>
<td>38</td>
<td>25.0</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>11.8</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>
6.3.8.2 Most disliked about tourism

Three main themes were observed as the most disliked about tourism. They were categorised as ‘Nothing to dislike’, ‘Tourist behaviour’ and ‘Not being involved’. There were other reasons that were reported by a few individuals and were categorised as ‘Others’ in Table 26. Fifty-one per cent (n = 77) reported that ‘there is nothing to dislike about tourism’. The second most disliked theme reported (n = 40, 26%) was associated with tourist behaviour. This includes comments such as ‘tourists bathing naked in the river’, ‘tourists did not respect our culture’, ‘tourists gossip about our lifestyle’, ‘tourists bringing their western way of life to the longhouse’, ‘tourists bring bad examples to our children’ and ‘tourists disturb our ladies and break longhouse custom’.

Another 17 per cent (n = 26) reported they disliked tourism in which they did not have involvement or could not see benefits arising. This included comments such as ‘tourists did not buy anything from us’, ‘did not give us any work’, ‘tourists come and go to our longhouse without our knowledge’, ‘tour operators bring tourists to the Ulu without involving us’ and ‘we are not involved in tourism work’.

Other things most disliked about tourism include ‘tourists only visiting other places and not visiting our longhouse’, ‘bad guide’, ‘tourists did not want to pay head tax when visiting our longhouse’, ‘nothing to dislike as there are no tourist visiting our longhouse’, ‘tourist programme is not properly organised’ and ‘our land is encroached on by outsiders’.

Table 26: Most disliked about tourism

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing to dislike</td>
<td>77</td>
<td>50.7</td>
</tr>
<tr>
<td>Tourist behaviour</td>
<td>40</td>
<td>26.3</td>
</tr>
<tr>
<td>We are not involved</td>
<td>26</td>
<td>17.1</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
6.3.8.3 Views of longhouse communities on impacts of tourism

Six longhouses (Rh. Griffin, Rh. Changging, Rh. Ipang, Rh. Endan, Rh. Kasi and Rh. Ngumbang) that have had tourists visiting their longhouse were asked questions related to impacts of tourism during the community group interviews. These included the following questions:

- Do they want to see more, or fewer, tourists visiting their longhouse?
- Does tourism negatively affect their culture, or way of life?
- Are they happy to see tourists in their longhouse all day long, or do they prefer tourists to visit only during certain times?
- Do they experience any shortage of labour during the tourist season?
- What are the advantages and disadvantages of having tourists in their longhouse?
- What do they see as the future advantages and disadvantages that tourism might bring to their longhouse?

All the longhouses reported that they would like to see more tourists visiting their longhouse. Benefits from tourism were given as the reason for wanting more tourists to come to their longhouse. For example a spokesperson for the Rh. Changging residents said,

*We would like to see more tourists visiting our longhouse. With more tourists, there will be more benefits.*

All six longhouses reported that tourism does not affect their culture, or their way of life. Rh. Ipang, Rh Griffin, Rh. Kasi and Rh. Endan said that there was no change as they have had few tourists visiting their longhouse. Rh. Ngumbang, the longhouse with the most experience in tourism, and Rh. Changging said that they have no idea if tourism could negatively affect their culture or way of life. They also said that so far there has been no change. The Rh. Changging residents pointed out that tourism could positively affect their culture. They said,
tourism could bring about a revival of culture as the younger generation will continue to practise it to attract tourists, otherwise it will die out as they move to town and forgot about the old ways.

Except for Rh. Kasi residents who said they prefer tourist visits at certain times only, all the other longhouses said that tourists could visit their longhouse at any time as long as they benefit from it. For example, the Rh. Griffin spokesperson said,

*Tourists can visit [our longhouse] at any time of the day, all day long, as long as we can get benefits from tourists. If they visit all day long, we do not need to work on the farm.*

All six longhouses mentioned that they had not experienced any shortage of labour during tourist visits. Rh. Endan mentioned that they had some shortage in 1990 to 1992 when there were tourists visiting their longhouse. Their reason was that there were only a few of them in their longhouse. Rh. Changging mentioned the possibility of a shortage of labour. They said,

*No, we have not experienced any shortage [of labour], but it is possible as there are only a few of us here.*

All the longhouses pointed out that the main advantages of tourism were the financial benefits from tourism and that there have been no disadvantages so far. The Rh. Ipang residents even said, "... tourists are disciplined people". When asked about the future potential advantages and disadvantages of tourism, the advantages mentioned include benefits from tourism and potential development brought about by tourism in Batang Ai. The potential disadvantages mentioned were associated with tourist conduct and behaviour. For example, the Rh. Kasi residents said, "...tourists may bring with them bad habits ... improper dressing which our children may imitate". However, they all mentioned that they can solve any potential problems arising from tourism as they come. They said, "... we can have dialogue to solve the problems".
The Chairman of Ng. Sumpa Tourism Committee commenting on the advantages and disadvantages of tourism said,

There are definitely some disadvantages, but out of every one disadvantage there are four advantages. One of the disadvantages, for example is when they visit the longhouse we have to sit with them, sometimes they returned at midnight, sometime at two am and we have to stay up with them. But if we think very carefully, why do they visit the longhouse, it is because they are bringing with them benefits to the longhouse. The ... disadvantage is only one, its advantages are, we get income from the boat, we get income from the sale of tuak, we get income from the sale of handicraft, we get income from helpers and we get income from porters and other things and sometime they give tips. That is more than four advantages.

6.3.9 Beliefs about tourism

To determine the levels of longhouse residents' beliefs about tourism, they were asked how strongly they agreed or disagreed with a number of statements about tourism. Scores of 1 to 5 were assigned to the different levels of agreement, that is; Strongly agree = 1, Agree = 2, Neither agree nor disagree = 3, Disagree = 4, Strongly disagree = 5 and Don’t know = 0. The modal scores are used to determine the beliefs of the majority of respondents and the mean scores are used as the levels of agreement for the whole community about the statement. For the overall beliefs about tourism, mean scores for ‘Strongly agree’ fall between 1 and 1.5, ‘Agree’ fall between 1.5 and 2.5, ‘Neither/Nor fall between 2.5 and 3.5, ‘Disagree’ fall between 3.5 and 4.5, and ‘Strongly disagree’ fall between 4.5 and 5.

Table 27 shows the number and the percentages of respondents concurring with the various levels of agreement. Statements with similar themes are grouped together to see if they are consistent or contradictory. Views of the residents recorded during the
community group interviews and views of key informants are used to support the statements.

The residents in Batang Ai believe that tourism is good for Sarawak and brings about development to the Batang Ai District. Table 27 shows that more than 90 per cent agree or strongly agree with both statements. Eight-nine per cent believe that tourism would be good for their longhouse, even though there are no tourists visiting the longhouses in the resettlement schemes. This may be the case as some that resided in the resettlement schemes also indicated that they had worked with tourism.

A majority of the residents in Batang Ai (82 %) believe that most tourists coming to Batang Ai are from overseas. Only seven per cent (n = 10) disagree or strongly disagree. Eighty-seven per cent believe that tourists come to their longhouse to see their culture and 78 per cent believe that Batang Ai National Park is one of the reasons for tourists coming to their longhouse (Table 27).

To a statement that they are spending more time on tourism related work than farming, 48 per cent (n =73) agree or strongly agree, only 25 per cent disagree or strongly disagree with the statement. This response contradicts the earlier finding that few of the longhouses are visited by tourists and working with tourism was part-time. A possible explanation for this might have been due to the Iban version of the statement where the words ‘rindang agi’ translate as ‘spending more’. If it is not pronounced correctly, or the respondent did not hear correctly, the words sound like ‘rindu agi’. This translates as ‘love to or prefer to’, which substantially changes the meaning of the statement. For this reason, the responses to this statement were rejected.

22 As discussed with research assistants after the researcher analysed the results.
Table 27: Number of respondents with levels of agreement on various statements on tourism

<table>
<thead>
<tr>
<th>Statements</th>
<th>Level of agreements (N=152)</th>
<th>Don’t know (0)*</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree (5)*</td>
<td>Disagree (4)*</td>
<td>Neither/ Nor (3)*</td>
</tr>
<tr>
<td>Tourism has created jobs in your/this area/longhouse</td>
<td>2 (1.3%)</td>
<td>3 (2.0%)</td>
<td>8 (5.3%)</td>
</tr>
<tr>
<td>The benefits of tourism are distributed widely through your/this longhouse community</td>
<td>3 (2.0%)</td>
<td>6 (3.9%)</td>
<td>4 (2.6%)</td>
</tr>
<tr>
<td>Only a few people in your/this longhouse benefit from tourism</td>
<td>15 (9.9%)</td>
<td>58 (38.2%)</td>
<td>12 (7.9%)</td>
</tr>
<tr>
<td>Most of the benefit from tourism goes to tour operators (e.g. based in Kuching) and very little benefit goes to the longhouse communities</td>
<td>29 (19.1%)</td>
<td>33 (21.7%)</td>
<td>9 (5.9%)</td>
</tr>
<tr>
<td>Tourism is good for Sarawak</td>
<td>0 (0.7%)</td>
<td>1 (1.3%)</td>
<td>2 (1.3%)</td>
</tr>
<tr>
<td>Tourism brings about development to Batang Ai District</td>
<td>1 (0.7%)</td>
<td>2 (1.3%)</td>
<td>5 (3.3%)</td>
</tr>
<tr>
<td>Tourism is good for your longhouse</td>
<td>2 (1.3%)</td>
<td>3 (2.0%)</td>
<td>8 (5.3%)</td>
</tr>
<tr>
<td>Tourism benefits you and your family</td>
<td>5 (3.3%)</td>
<td>10 (6.6%)</td>
<td>11 (7.2%)</td>
</tr>
</tbody>
</table>

(5)*: Refers to score assigned to each level of agreements
Modal category is shaded gold
Table 27: Number of respondents with levels of agreement on various statements on tourism (continued)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Disagree (5)*</th>
<th>Disagree (4)*</th>
<th>Neither/ Nor (3)*</th>
<th>Agree (2)*</th>
<th>Strongly Agree (1)*</th>
<th>Don’t know (0)*</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism has increased the cost of living in your/this area</td>
<td>5 (3.3%)</td>
<td>8 (5.3%)</td>
<td>6 (3.9%)</td>
<td>93 (61.2%)</td>
<td>33 (21.7%)</td>
<td>7 (4.6%)</td>
<td>1.93</td>
</tr>
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<td></td>
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<td>2</td>
</tr>
<tr>
<td>The development of tourist facilities and attractions is a threat to your/this local environment</td>
<td>25 (16.4%)</td>
<td>80 (52.6%)</td>
<td>13 (8.6%)</td>
<td>14 (9.2%)</td>
<td>11 (7.2%)</td>
<td>9 (5.9%)</td>
<td>3.44</td>
</tr>
<tr>
<td></td>
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<td>4</td>
</tr>
<tr>
<td>Tourism makes you feel like a stranger in your/this area/longhouse</td>
<td>34 (22.4%)</td>
<td>73 (48%)</td>
<td>10 (6.6%)</td>
<td>20 (13.2%)</td>
<td>10 (6.6%)</td>
<td>5 (3.3%)</td>
<td>3.57</td>
</tr>
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<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Your/this area/longhouse should be promoted to attract many more tourists</td>
<td>4 (2.6%)</td>
<td>1 (0.7%)</td>
<td>3 (2.0%)</td>
<td>102 (67.1%)</td>
<td>39 (25.7%)</td>
<td>3 (2.0%)</td>
<td>1.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Most of the tourists coming to your/this area/longhouse are from overseas</td>
<td>5 (3.3%)</td>
<td>5 (3.3%)</td>
<td>7 (4.6%)</td>
<td>85 (55.9%)</td>
<td>39 (25.7%)</td>
<td>11 (7.2%)</td>
<td>1.81</td>
</tr>
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<td></td>
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<td></td>
<td>2</td>
</tr>
<tr>
<td>You are spending more time on tourism related work than farming</td>
<td>11 (7.2%)</td>
<td>27 (17.8%)</td>
<td>33 (21.7%)</td>
<td>63 (41.4%)</td>
<td>10 (6.6%)</td>
<td>8 (5.3%)</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Tourists come to your/this longhouse to see your/local culture</td>
<td>1 (0.7%)</td>
<td>0 (0.0%)</td>
<td>4 (2.6%)</td>
<td>92 (60.5%)</td>
<td>40 (26.3%)</td>
<td>15 (9.9%)</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>2</td>
</tr>
<tr>
<td>Tourists come to your/this longhouse because of Batang Ai National Park</td>
<td>10 (6.6%)</td>
<td>5 (3.3%)</td>
<td>7 (4.6%)</td>
<td>93 (61.2%)</td>
<td>26 (17.1%)</td>
<td>11 (7.2%)</td>
<td>1.99</td>
</tr>
<tr>
<td></td>
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<td>2</td>
</tr>
</tbody>
</table>

(5)*: Refers to score assigned to each level of agreements
Modal category is shaded gold
6.3.9.1 Jobs created by tourism

Eighty-four per cent (n = 127) believe that tourism has created jobs in Batang Ai, three per cent disagree (n = 5) and the rest either don’t know or were not sure. Commenting on job opportunities brought about by tourism, the General Manager of the Hilton Longhouse Resort said,

The ... majority of the staff [Hilton Longhouse Resort] here are Iban recruited from nearby longhouses, including myself; ... I am from Seratok which is not very far from here. We employ them [local people], we train them and we expose them to other properties in Kuching and thereafter when they have gained some experience [and] knowledge about looking after the guests, ... they come back here ... and ... I am sure that it [Hilton Longhouse Resort] has helped people ... [and] has contributed to ... their income.

When asked what percentage of the staff were local, he said,

I am talking about 95 per cent of the staff being from this area. Five per cent are the supervisors [from Kuching]. Some supervisors have left and [their positions] are taken over by the locals, some are doing well.

The Chairman of Koperasi Serba Guna Ulu Batang Ai also mentioned that the Hilton Longhouse Resort does create jobs for local people. He said,

As of now ... we look at people working there [Hilton Longhouse Resort], there are fifty to sixty local people working there.

However, the residents of longhouses in the Ulu (Rh. Kasi, Rh. Endan, Rh. Griffin, Rh. Changging, Rh. George and Rh. Ngumbang) mention that none of their people were employed in Hilton Longhouse Resort and that they employ only people from downriver. For example, the Rh. Changging spokesperson said,
... none of us are qualified to work in the hotel [Hilton Longhouse Resort]. It employs mainly people from the resettlement schemes down river.

Results of this survey indicated that none of the respondents were employed in Hilton Longhouses and that none were employed full-time in tourism. The people employed by the Hilton Longhouse Resort were mainly from among the local people from the resettlement schemes down river, who had better educational attainment than those from the longhouses within the study site. The Hilton Longhouse Resort does contribute to employment of local people in Batang Ai but not to the communities in Ulu Batang Ai.

6.3.9.2 Benefits of tourism

Eighty-one per cent (n = 123) agree or strongly agree that tourism benefits them, or their family (Table 27). Eighty-three per cent (n = 131) agree or strongly agree that benefits of tourism are distributed widely through their longhouse community (Table 27). The Chairman of Ng. Sumpa Tourism Committee commenting on the benefits of tourism said,

... my view is that any agency from any sector [public or private] should appropriately promote tourism because tourism is better than any other business. I am of the opinion that not only the longhouses benefit, we Malaysian all benefit, the airline also benefits, the accommodation [sector], such as the hotel also benefits, transportation in the city also benefits, so all these receive benefits, not only the longhouses. So I think ... the whole country benefits from tourism.

Commenting on how the Hilton Longhouse Resort benefits local communities, the General Manager said,

We [Hilton Longhouse Resort] don’t send guests to longhouses, we get the travel agent to handle it. The travel agent will arrange with the longhouse people so that they can pick them [tourists] up ... and ... they [longhouse people] earned a reasonable amount of money by sending up the guest [transporting], up and down, probably around RM 140 or more within the space of three to four hours.
To a statement that only a few people in their longhouse benefit from tourism (Table 27), 48 per cent (n = 73) disagree or strongly disagree while 37 per cent (n = 57) agree or strongly agree. The overall belief of the residents was a score of 2.93, which falls within the mid-point ‘Neither/Nor’ level. Even though the majority disagree or strongly disagree with the statement, it does not fully support the statement that benefits are distributed widely throughout their longhouse (Table 27). There is no logical explanation to support this, a possible reason may be that some respondents did not understand the statement.

To a statement that most of the benefits from tourism goes to tour operators and very little benefit goes to longhouse communities (statement No. 4), 41 percent (n = 62) disagree or strongly disagree and 41 percent (n = 63) agree or strongly agree. The overall beliefs of the communities scored 2.71, which falls within the ‘Neither/Nor’ level. The views of key informants reflect the split in beliefs among the communities. The Chairman of Ng. Sumpa Tourism Committee said,

My feeling is, ... actually the tour agency is receiving much more. So for us, we cannot be annoyed with the tour agency for receiving more profit because they are the one promoting our place, making brochures and things like that, so long as they do share the profits with us.

The ‘Ecotourism Officer’ in the Ministry of Tourism said,

There is always a feeling that the [tour] operators ... will get more benefits than the local people, so in this aspect we have to get these people together and work on the understanding. The local people are the product that the tourists want to see and they [tour agencies] have to give more [money]. If it means that they [tour agencies] have to put a higher price on these packages, so be it. Actually, ... in terms of accommodation and other services out here [Batang Ai] ... the prices are quite low.
6.3.9.3 Impacts of tourism

The residents in Batang Ai believe that tourism has increased the cost of living in Batang Ai. Table 27 shows that 82 per cent (n = 126) agree or strongly agree with this statement. An increase in the price of goods in Batang Ai is obvious; for example, the cost of a gallon of petrol at Batang Ai is RM 7 compared with RM 6 in major towns in Sarawak. However, the increase in price is attributed to transportation and the remoteness of the area rather than tourism. With or without tourism, the price of goods will remain higher than in major town centres for this reason. Thus, it is only the perception of the residents that tourism has increased the cost of living in Batang Ai. Tourism has not brought about an increase in the cost of living.

A majority of the residents in Batang Ai believe that the development of tourist facilities and attractions is not a threat to the local environment (69%). Only 16 per cent believe that it is a threat to the local environment. A majority of the residents (70.4%) disagree or strongly disagree with the statement that tourism has made them feel like strangers in Batang Ai, or in their longhouse. A large majority (93%) believe that Batang Ai and their longhouses should be promoted to attract more tourists.

The results show that residents in Batang Ai believe that tourism has very little negative impact on them and on the environment. The tour operators play a very important role in ensuring that the local residents remain positive about tourism. For example, the Managing Director of Borneo Adventure said,

*We try to limit the impact [on the local community] as much as possible and so that is why we built the lodge ...away from the longhouse as much as we can so that people can have breathing space. It’s [low impacts] a lot of common sense, ... without being too disruptive to the longhouse people in what they are doing.*

He mentioned that they do not highlight cultural performances in their tour and said,
 Basically, if they [the longhouse community] have to do performances day in and day out, it may lose its part. That is why I ... oppose ... people commercialise[ing] a lot of the 'trivial life', the 'miring' and so on. They don't do that every time. They only do that for special occasions and you [tourists] don't have that in tourist programmes and that is why we don't have that [included in their tour package]. It's like us, we don't dress up nicely everyday, for example if you are going to the farm, you don't dress up. It is only during gawai time, special time, that you do that. And likewise, that sort of thing we don't [promote].

He also emphasised mutual respect between host and guest. He mentioned that,

\textit{We are very careful to show a lot of respect for the local culture. We make sure ... our guide knows ... that way [mutual respect] and to be proud of the culture and thats why ... we never talk about 'primitive'. Its a bit wicked. I hate [it] ... when people say that we want to bring you to the primitive, as we [longhouse community] are not primitive, we live in the 20\textsuperscript{th} century but we do promote [the] traditional. There is a difference. The people [other tour operators] mixed that up.}

\textit{We show people [tourists] to respect [local culture]. They [the longhouse community] know that the people we bring actually respect ... [them]. There is mutual respect between the visitors and the community. So the community didn't feel [that] ... because you are rich, we have to kiss your feet or what ever it is. No, we [tourists] come as equals.}

He also pointed out that the longhouse residents should be the way they are and not fake a lifestyle for the tourist. He mentioned that,

\textit{We like them [longhouse community] to be themselves, wear t-shirt, wear sarong, no apologies for these because thats how we [people] are. Also number one, we realise a community ... is developing -- it cannot be like people in the zoo.}
The Chief Executive Officer for Sarawak Tourism Board stressed the need to monitor the impacts of tourism on the local community. He said,

[It is] ... the social responsibility of these operators, ... responsibility to the local people, and responsibility to the environment ... to monitor ... any negative impacts and also pick up the positive impacts ... so they can be shared with other areas.

6.3.10 Summary of section

There is no specific word denoting 'tourist' in the Iban language. The term 'temuai' means any visitor other than people from their own longhouse. Thus, the word 'tourist' is used to refer to tourists in the interviews conducted in the Iban language.

There were no tourists visiting the Rh. Rimong village in Lubok Antu and the longhouses in the resettlement schemes. Rh. Ngumbang received a regular flow of tourists through their co-operation with Borneo Adventure. Rh. Ipang received tourists brought in from the Hilton Batang Ai Longhouse Resort. The other longhouses received very few tourists. Rh. Endan had tourists visiting their longhouse in 1990 to 1992, brought in by Borneo Adventure. However, they have received very few tourists since Borneo Adventure pulled out and focused their attention on Rh. Ngumbang. The reasons for this will be discussed in the next section.

The most likely place for the longhouse residents to meet with tourists is in their own longhouse, followed by Batang Ai National Park and Wong Irup or 'jelatong'. All the inhabitants of Rh. Ngumbang and Rh. Ipang indicated that they met with tourists in their longhouse. Despite the fact that there are tourists in the Hilton Longhouse Resort every day, few mentioned it as a place where they meet with tourists for the reason that the longhouse resident seldom or never visit the resort. The resident of longhouses in the resettlement schemes indicated that they meet tourists in places other than their longhouse, supporting the statement that there are no tourists visiting their longhouse.
There is no peak tourist season in Batang Ai. The Rh. Ngumbang residents which had the most tourist visits, reported that there is no peak tourist season in their longhouse. Those that reported that there is a tourist season in Batang Ai were from the longhouses which had very few tourist visits. They may have reported the time in which they met tourists in their longhouse. However, this does not support a tourist season but reflects the month in which tourists visited their longhouse.

The questions of how much tourists spent in their longhouse and how much tourists purchased (paid for) services and goods in their longhouse were observed to be challenging questions for the longhouse residents. The most common reaction was 'I don't know'. However, when asked to provide an estimate, they often obliged. Thus, their response may not reflect actual tourist spending and purchasing but the estimates of what the respondents perceived as tourist spending and purchasing. A majority of the respondents reported that tourists spent less than RM 100 per month in their longhouse. Higher tourist spending was reported by residents of Rh. Ngumbang and Rh. Ipang. Tourist spending in Rh. Ngumbang was calculated to be about RM 147,000 per year, which concurs with findings by Antang (2001).

Transportation brought in the most income to the longhouse residents followed by the sale of souvenirs, sale of food and drink, and other services. The average guiding fees were RM 15 per day, cultural performances were RM 8 per person, cooking was RM 12 per day and kitchen helping RM 6 per day. Other income received from tourists included 'head tax' and tips.

All the longhouse residents would like to have more contacts with tourists. The main reason for wanting more contacts was the financial benefits they hoped to gain from tourists. The other reason was the opportunity to gain knowledge and exchange ideas with tourists. Only two individuals wanted the same number of tourists, the reason being that they have a lot of other work commitments.
A majority of the longhouse residents that had contacts with tourists have worked in tourism related work. The tourism work was part-time and not seasonal, depending on the availability of tourists and participation is rotated among the longhouse residents. This concurs with the suggestion by Sagging et al., (2000) that tourism activities in the longhouse were normally rotated among all families in the longhouse, and that all families were encouraged to participate.

The most important tourism related work is transportation. Forty-two percent of the people that had worked with tourism worked in the transportation sector, followed by accommodation, cultural performances and guiding. A majority were paid less than RM 100 per month for the work. This does not mean that tourism related work in Ulu Batang Ai is low paying work but rather reflects the temporary nature of the work and its rotation among the longhouse residents. Thus, each individual might work for a few days in a month, receiving less than RM 100 for the job.

Aspects of tourism that the longhouse residents ‘most like’ are the benefits they hoped to gain from tourism. Another aspect was the knowledge they hoped to gain from tourism. A majority of the longhouse residents reported that there was nothing to dislike about tourism. Twenty-six per cent mentioned tourist behaviour as the ‘most disliked’ aspect of tourism. Overall, the longhouses residents in Ulu Batang Ai perceived that tourism brings about benefits and that there was nothing to dislike about tourism.

Negative aspects of tourism mentioned by some members of the residents were mainly associated with tourist behaviour. However, the Rh. Ipang residents, based on their experience with tourists brought in by the Hilton Batang Ai Longhouse Resort pointed out that there is nothing to dislike about tourism as tourists are “disciplined people”. This indicates that longhouse residents in Ulu Batang Ai have experienced few negative impacts from tourism.

Contrary to findings by Yea and Noweg (2000) that woman had to spend more time on the farm as a result of tourism, the residents in Ulu Batang Ai did not experience any
shortage of workmen due to tourism. However, residents of the smaller longhouses pointed out that there is a potential shortage if more tourists visit their longhouse, as there are only a few of them.

Only the Rh. Kasi residents would like to have tourists visiting their longhouse during a specific time only. All the other longhouse residents said that tourists could visit at any time, as long as they benefited from their visits. The residents of Rh. Griffin said that tourists could visit all day long, the more the better, so long as they benefit from tourism instead of working on the farm. This indicated their preference to work with tourism than on the farm. A number of individuals in other longhouses also indicated that they prefer to work with tourism related work than on the farm.

The residents in Batang Ai believe that tourism has created jobs in Batang Ai. The jobs created by the Hilton Batang Ai Longhouse Resort are also seen as jobs brought about by tourism. However the majority of the residents in Ulu Batang Ai believe that it does not benefit them as they were not employed in the Resort. Some members of the resident mention that they do not have the qualifications to be employed in the Resort.

A majority (89%) of the residents believe that tourism is good for their longhouse despite no tourists visiting the longhouses in the resettlement schemes. They believe that tourism benefits are distributed widely throughout the longhouse. About fifty per cent believe that the tour operator benefits more than the local people.

The residents in Batang Ai believe that tourism has increased the cost of living in the area. The cost of goods in Batang Ai is a fraction higher than in the major towns. Such an increase in the price of goods is normal in all remote regions in Sarawak, including areas where there is no tourism. The increase is attributed to the increased cost of transportation of goods. For this reason, the cost of goods in Batang Ai will remain higher than in major towns, with or without tourism. Thus, the increase is not due to tourism as believed by the local longhouse communities.
6.4 KNOWLEDGE, BELIEFS ABOUT, AND ATTITUDES TOWARD BATANG AI NATIONAL PARK AND CONSERVATION

Respondents' knowledge, attitudes, and beliefs about Batang Ai National Park and conservation are presented in this section. Where appropriate, Chi-square tests have been applied to determine if certain characteristics are dependent on each other. Qualitative materials from community group interviews and key informants were used to provide greater understanding of the issues. A short summary of the section is presented at the end of this section.

To determine the strength of longhouse residents' beliefs about Batang Ai National Park and conservation, they were asked how strongly they agreed or disagreed with a number of statements about Batang Ai National Park and conservation. Scores of 1 to 5 were assigned to the different levels of agreement, that is; Strongly agree = 1, Agree = 2, Neither agree nor disagree = 3, Disagree = 4, Strongly disagree = 5 and Don’t know = 0. Modal scores are reported while mean scores are used as the levels of agreement for the whole community about the statement. For the overall beliefs about conservation, mean scores for 'Strongly agree' falls between 1 and 1.5, 'Agree' falls between 1.5 and 2.5, 'Neither/Nor' falls between 2.5 and 3.5, 'Disagree' falls between 3.5 and 4.5, and 'Strongly disagree' falls between 4.5 and 5.

Table 28 shows the number and the percentages of respondents concurring with the various levels of agreement. Statements with similar themes are grouped together to see if they are consistent or contradictory. Views of the residents recorded during the community group interviews and views of key informants are used to support the statements.
Table 28: Number of respondents with levels of agreement on various statements on conservation

<table>
<thead>
<tr>
<th>Statements</th>
<th>Level of agreements (N = 152)</th>
<th>Don’t know (0)*</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree (5)*</td>
<td>Disagree (4)*</td>
<td>Neither/Neither/Nor (3)*</td>
</tr>
<tr>
<td>BANP provides opportunity for employment</td>
<td>1 (0.7%)</td>
<td>8 (5.3%)</td>
<td>1 (0.7%)</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>BANP ensures clean water and good environment for the area</td>
<td>0 (1.3%)</td>
<td>2 (1.3%)</td>
<td>3 (2.0%)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANP benefits you and your family</td>
<td>3 (2.0%)</td>
<td>15 (9.9%)</td>
<td>12 (7.9%)</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>BANP benefits Sarawak as a whole more than it benefit the local people</td>
<td>12 (7.9%)</td>
<td>30 (19.7%)</td>
<td>12 (7.9%)</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>BANP benefits tourists more than it benefits the local people</td>
<td>11 (7.2%)</td>
<td>30 (19.7%)</td>
<td>18 (11.8%)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourists come to this area because of BANP</td>
<td>9 (5.9%)</td>
<td>8 (5.3%)</td>
<td>4 (2.6%)</td>
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<tr>
<td></td>
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<tr>
<td>BANP is important for the protection of orangutan and other wildlife</td>
<td>0 (2.0%)</td>
<td>3 (2.0%)</td>
<td>2 (1.3%)</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>It is important to protect the forest area next to your/this longhouse in order to continue to attract tourists</td>
<td>0 (2.0%)</td>
<td>3 (2.0%)</td>
<td>3 (2.0%)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(5)* Refers to scores assigned to each level of agreements
Modal category is shaded gold
Table 28: Number of respondents with levels of agreement on various statements on conservation (continued)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Disagree (5)*</th>
<th>Disagree (4)*</th>
<th>Neither/Nor (3)*</th>
<th>Agree (2)*</th>
<th>Strongly Agree (1)*</th>
<th>Don’t know (0)*</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is important to protect wildlife for our children</td>
<td>0</td>
<td>0</td>
<td>2 (1.3 %)</td>
<td>84 (55.3 %)</td>
<td>63 (41.4 %)</td>
<td>3 (2.0 %)</td>
<td>1.56</td>
<td>2</td>
</tr>
<tr>
<td>There is poaching in BANP</td>
<td>24 (15.8 %)</td>
<td>42 (27.6 %)</td>
<td>6 (3.9 %)</td>
<td>27 (17.8 %)</td>
<td>22 (14.5 %)</td>
<td>31 (20.4 %)</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>People who poach in BANP should be punished</td>
<td>1 (0.7 %)</td>
<td>3 (2.0 %)</td>
<td>6 (3.9 %)</td>
<td>64 (42.1 %)</td>
<td>66 (43.3 %)</td>
<td>12 (7.9 %)</td>
<td>1.51</td>
<td>1</td>
</tr>
<tr>
<td>Local people should not be allowed to hunt near tourist facilities, such as the jungle trail in BANP</td>
<td>12 (7.9 %)</td>
<td>19 (12.5 %)</td>
<td>9 (5.9 %)</td>
<td>77 (50.7 %)</td>
<td>30 (19.7 %)</td>
<td>5 (3.3 %)</td>
<td>2.28</td>
<td>2</td>
</tr>
<tr>
<td>Local people are consulted by the Forest Department with respect to development in BANP</td>
<td>7 (4.6 %)</td>
<td>5 (3.3 %)</td>
<td>14 (9.2 %)</td>
<td>66 (43.4 %)</td>
<td>25 (16.4 %)</td>
<td>35 (23 %)</td>
<td>1.67</td>
<td>2</td>
</tr>
<tr>
<td>People with privileges of traditional use of BANP should be allowed to hunt, fish and collect jungle produce as much as they want, for food.</td>
<td>17 (11.2 %)</td>
<td>29 (19.1 %)</td>
<td>14 (9.2 %)</td>
<td>55 (36.2 %)</td>
<td>29 (19.1 %)</td>
<td>8 (5.3 %)</td>
<td>2.51</td>
<td>2</td>
</tr>
<tr>
<td>People from outside this region should not be allowed to hunt, fish and collect jungle produce from BANP</td>
<td>0 (0.7 %)</td>
<td>1 (1.3 %)</td>
<td>2 (1.3 %)</td>
<td>67 (44.1 %)</td>
<td>75 (49.3 %)</td>
<td>7 (4.6 %)</td>
<td>1.44</td>
<td>1</td>
</tr>
<tr>
<td>More facilities for tourists should be provided at BANP</td>
<td>0 (0.7 %)</td>
<td>1 (1.3 %)</td>
<td>0 (0.7 %)</td>
<td>88 (57.9 %)</td>
<td>53 (34.9 %)</td>
<td>10 (6.6 %)</td>
<td>1.53</td>
<td>2</td>
</tr>
</tbody>
</table>

(5)* Refers to scores assigned to each level of agreements
Modal category is shaded gold
6.4.1 Knowledge of Batang Ai National Park

Individual respondents were asked their levels of agreement with a number of statements on Batang Ai National Park and conservation. Table 28 shows a majority of the individual respondents agree or strongly agree that Batang Ai National Park ensures clean water and a good environment for the area (94%), that Batang Ai National Park is important for the protection of orang utan and other wildlife (95%), and that it is important to protect wildlife for our children (97%). This is supported by the views of the residents during the community group interviews that Batang Ai National Park is for the protection of wildlife and forest. The Rh. Rumpang residents’ spokesperson said,

*The [Batang Ai] National Park is for the protection of forest, wildlife and fish so that they do not become extinct, and for the protection of the environment.*

The protection of the environment was also mentioned by two other longhouses -- Rh. Betok and Rh. Ayum. Batang Ai National Park is for the protection of forest and wildlife for future generations to see was mentioned by the residents of the Rh. Griffin and Rh. Changging. For example a speaker for the Rh. Griffin resident said,

*It [Batang Ai National Park] is a place for the protection of forest and wildlife for our children and grandchildren.*

This is expected as extensive consultations were conducted by the government with the local communities prior to the gazettement of Batang Ai National Park. There was also an extensive conservation education programme conducted by the Forest Department prior to, and after the establishment of the park.

6.4.1.1 Knowledge of the Park regulations

During the community group interviews, three longhouses (RH. Endan, Rh. Rumpang and Rh. Betok) mentioned that the local communities were granted privileges to fish, hunt and gather forest produce for their own consumption in Batang Ai National Park. For example, a speaker of the Rh. Endan longhouse said,
In the park, wildlife cannot be killed except for wild pigs for our own consumption. Trees and plants cannot be cut except for our own use such as for making boats. Outsiders cannot enter as they like.

The statement indicated that they were aware of the Park regulations; however, hunting of wildlife includes any species other than the totally protected and protected species, not only wild pigs.

Different from comments by other longhouses residents was the comment by the Rh. Ngumbang residents that “... the park regulation appears to be easily changed as now outsiders can also fish and hunt without deterrence [prosecution] by Park management”. The residents of Rh. Ngumbang attributed hunting and fishing by outsiders to a change in park regulations, which was not actually the case. The Rh. Endan spokesman also made a similar observation but they attributed this to the park management. A speaker said, “Initially the Forest Department were very strict in protecting the park but not any more”.

The Forest Department counterpart to the ITTO project in Batang Ai mentions that

“... the main problem with Batang Ai National Park right now is that people from outside the area, ... [who] have relatives inside the seven longhouses [with privileges], ... enter ... the national park using one-person's name [privilege holder]. If we keep allowing ... privilege [holders] to bring ... [their] distant relatives, I think we may have to ... [include] the whole population of Sarawak ... that is the ... problem at the moment.

It is not surprising that the local communities suggest that the Forest Department was no longer strict in implementing park regulations if privilege holders could get away with bringing non-privilege holder relatives or friends to hunt and fish in the Batang Ai National Park. Past management has been very strict in granting permission for
... when those longhouse dwellers with rights to enter the park [come to hunt] we... record whatever they catch inside the park when they pass our station at Ng. Lubang Baya.

We encountered one problem and we managed to apprehend the culprit and he was blaming [claiming] that he has the right to enter but... he is not from the longhouses that were ... registered during the establishment [gazettement of the Park], ... it's quite a big problem, but because it [evidence] is supported by the ...Longhouse Head that he is truly a descendent ... [and] lived in that Park before. [He was released without being charged]. So it's a matter of handling it [appropriately] and then making people understand how they should enter the Park.

The findings above indicated that the local communities have a good understanding of the main purpose of Batang Ai National Park and their rights over the park. They also believe that it is important to conserve wildlife for future generations. However, to some, the current park management has been weak in implementing park regulations compared with previous years.

6.4.2 Poaching in Batang Ai National Park

To the statement that there is poaching in Batang Ai National Park, 43 per cent (n = 66) disagree or strongly disagree, 32 per cent (n = 49) agree or strongly agree, while 20 per cent (n = 31) don't know. Six people could not decide and reported as 'neither/nor' with the statement (Table 28). The Chairman of Koperasi Serba Guna Ulu Batang Ai who is also the caretaker of the cooperatives' shop at Wong Irup, the boat landing point at the dam site, observed that there were outsiders going to the Ulu to hunt and fish. He mention that,
they [outsiders] are accompanying the locals as friends. It is always the people from Rh. Ayum, ... also people from Rh. Griffin. In the last few weeks even the Chinese went up there following the local people. This month twice or three times I noticed outsiders following [accompanying] the locals up there. I have not seen outsiders going in by themselves. Even the teachers went up there, that Ayum brother; that is why sometimes I wonder why these people don’t think about their heritage, they like to bring outsiders.

This problem associated with the privilege holders bringing non-privilege holders was identified by the previous Park Warden. The previous officer in-charge of Batang Ai National Park mentioned that,

... sometimes we do have problems with these local people [privilege holders]. They are bringing other people ... into the Park, those who have no right inside the Park.

Table 28 shows that a majority of the respondents also believe that people from outside Batang Ai should not be allowed to hunt, fish and collect jungle produce from Batang Ai National Park (93.4 %) and that people who poach in the Park should be punished (85.5 %). The Chairman of the Ng. Sumpa Tourism Committee, commenting on the use of resources in the park by fellow privileges holders said,

If I am in-charge [of Batang Ai National Park], ... not that I want to be in-charge but if I am there, I don’t care if the people [fellow privilege holders] are angry with me, I will not let them enter to fish or to hunt because if the wildlife could be seen easily, and visitors arrived everyday, who would benefit; it is the local people who benefit.

The current Park Warden reported that there were no problems with poaching in the park. He said,
At the moment I have no problem with these things [poaching] because we all know that mostly the local communities... have special privileges, especially for the seven longhouses, ... they can hunt, [and] can fish for their own consumption. We tried our best to control these thing by posting our staff there especially at Ng. Lubang Baya [Ranger Station]. We have our station there to look ...[stop] outsiders who tried to poach or tried to do illegal fishing there.

The statements by the residents and key informants indicated that the non-privilege holders who were hunting, fishing and gathering forest produce in the park were accompanied by the local people who have privileges over the park. Illegal entry by outsiders going on their own were seldom if ever, according to the Chairman of Koperasi Serba Guna Ulu Batang Ai. This problem of privilege holders bringing along non-privilege holders has been recognised and dealt with since 1996, and observed by the locals as ‘strict action’ of the Forest Department.

The current Park Warden reported that they do not have the problem of illegal entry. However, the Rh. Ngumbang residents commented that the Park Regulations appear to be easily changed, when commenting on the current ease of entry by non-privilege holders accompanying some privilege holders. Field observation in February revealed that the Records of Movement of Local People\textsuperscript{23} for 2002 at Ng. Lubang Baya Ranger Station were incomplete, indicating that there was no serious commitment on the part of the officers implementing it. This suggests that disobedient locals with privileges could easily take advantages of the situation and bring non-privilege holders without being detected.

\textsuperscript{23} Records of Movement of Local People: Records names of local people with privileges who enter the park to exercise their privileges to hunt, fish or harvest forest produce. It includes time and date of entry, and tools or weapons brought along during the trip. The applicants have to sign in on entry and sign out when exiting the park. They have to report all their catch. It serves as a means to check non-privilege holders from accompanying locals with privileges as well as stopping any illegal entry.
6.4.3 Hunting, fishing and gathering forest produce by privilege holders in Batang Ai National Park

The local residents have mixed reactions to the statement that people with privileges of traditional use of Batang Ai National Park should be allowed to hunt, fish and collect jungle produce as much as they want for food (Table 28). Only 55 per cent (n = 84) agree or strongly agree with this statement while 30 per cent (n = 46) disagree or strongly disagree. The views of those who disagree or strongly disagree are communicated by a number of key informants. For example, the Chairman of the Ng. Sumpa Tourism Committee said,

*My view is that we have been living here ... since the days of our ancestors planting rice, hunting animals, gathering forest produce, and until now our livelihood is still the same. If we want changes, ... so our way of thinking should change, ... such as we should not kill too many fish, there should be some limit to it. If we do not have a limit, and we do as we like, our grand children in the future may not see anything. So like the Iban saying goes, our future will be gloomy.*

The Chairman of Koperasi Serba Guna Ulu Batang Ai shared the views of the Chairman for the Ng. Sumpa Tourism Committee. He proposed that some areas be closed from hunting and fishing. He said,

*... that we use river system for example at Ulu Batang Ai, the Mujan area should be closed for six months ... then it be open to the local people, ... so that fish can breed. The upper Ulu Ai should be closed for protection to allow more fish there to show visitors.*

He also proposed that “...there is a special [certain] area allocated to each longhouse and there is an open and closed season ... but not as free as they [local people] like.

A Chi-square test shows no significant relationship between location and the beliefs that local people with privileges of traditional use of Batang Ai National Park should be allowed to hunt, fish and collect jungle produce as much as they want for food, $\chi^2$ (55,
There is no difference in beliefs between the different locations. There is also no significant relationship with occupation, \( \chi^2 (25, 152) = 19.59, \) n.s., or with 'Tourism Longhouses Categories', \( \chi^2 (10,150)=17.16, \) n.s. The result suggests that the local communities believe that they should be allowed to exercise their privileges of traditional use of the park as much as they want as shown by the mean score value of 2.28 (Table 28).

To the statement that local people should not be allowed to hunt near tourist facilities such as the jungle trail in Batang Ai National Park, 70 per cent (n = 107) agree or strongly agree. Twenty per cent (n = 31) disagree or strongly disagree. A Chi-square test of significance of this statement with location, \( \chi^2 (55, 152) = 72.51, \) n.s., with occupation, \( \chi^2 (25, 152) = 32.50, \) n.s., and with 'Tourism Longhouses Categories', \( \chi^2 (10,150)=19.56, \) n.s., shows no significant relationship. During the community group interviews, all the longhouse communities supported the statement that there should be no hunting allowed near tourist facilities for reasons of safety and the attractiveness of the place.

6.4.4 Benefits from Batang Ai National Park

Table 28 shows that 89 per cent (n = 136) of the respondents agree or strongly agree that Batang Ai National Park provides opportunity for employment. All the longhouses mentioned during the community group interviews that Batang Ai National Park provides opportunity for employment. For example the spokesperson for the Rh. Ipang residents said,

*We can work there [Batang Ai National Park] on two months rotation. There will be other work opportunities for us and for our children in the future.*

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24 Batang Ai National Park employed one person from each of the nine longhouses communities in and adjacent to the Park. Seven of the longhouses were those that have privileges to hunt, fish and gather forest produce in the park and another two longhouses were situated just down river of the park headquarters, and thus were included in the work rotation. They were employed as daily paid labourers earning around RM 750 per month. Each *bilik* in the longhouse was given their turn to work, thus, for a 30 *biliks* longhouse the *bilik* representative will only work once in every 30 months.
A majority of the individual respondents agree or strongly agree that Batang Ai National Park benefits them and their family (78 %). Only 12 per cent (n = 18) disagree or strongly disagree. The views of the communities during the community group interviews supported this finding. All the residents indicated that Batang Ai National Park benefits them in some way. Six longhouses (Rh. Griffin, Rh. Ipang, Rh. Ngumbang, Rh. Changging, Rh. Ayum and Rh. Kasi) mentioned good environments and availability of wildlife as benefits from the park. For example, a spokesperson of the Rh. Ayum residents said,

*It [Batang Ai National Park] provides us with a good environment, fish and wildlife in the forest. It also protects our heritage such as land and our rights to use the resources for example, hunting and fishing.*

The Rh. Betok residents mentioned that Batang Ai National Park “…brings about development and during emergencies such as sickness, the park management also helps the local people”. Five longhouses (Rh. Betok, Rh. Ayum, Rh. Changging, Rh. Rumpang and Rh. Rimong) credited benefits derived from tourism to Batang Ai National Park. A speaker for the Rh. Rimong residents said,

*The park can benefit the local people through benefits brought about by tourism, like those people in [Rh. Ngumbang], Ng. Sumpa.*

Even the residents in the resettlement scheme that did not participate in the two-monthly job rotation in the park, mentioned that they benefit from the park. For example, a spokesperson for the Rh. Betok residents said,

*We may not feel the importance of the Park today but our children may benefit more in the future. For example, if you have a chain saw, it is not just for felling trees, with skill it could be used for cutting timber, making planks and lots of other uses. The park is the same. If there are job opportunities in the Ulu, we are willing to return, as there are few job opportunities here.*
Fifty-eight per cent (n = 88) agree or strongly agree that Batang Ai National Park benefits Sarawak as a whole more than it benefits the local people. Eighteen per cent (n = 42) either disagree or strongly disagree. A similar pattern is observed with the response to the statement that Batang Ai National Park benefits tourists more than it benefits the local people. Fifty-two per cent agree or strongly agree (n = 79) and 27 per cent disagree or strongly disagree (n = 41). However, during the community group interview, only the Rh. Betok residents mentioned, “... outsiders benefited from the park more than the local people”. There was a clear split between those that agreed and those that disagreed with the statements among some of the communities during the community group interviews.

6.4.5 Importance of Batang Ai National Park for tourism

Eighty-four (n = 127) agree or strongly agree that tourists come to Batang Ai because of Batang Ai National Park. Only 11 per cent (n = 17) disagree or strongly disagree. During the community group interviews, all the communities mentioned that Batang Ai National Park is important for tourism. The Rh. Ngumbang residents suggested,

*It [Batang Ai National Park] protects the environment and wildlife which attract tourists. No one will want to come here if it is destroyed. Without the park, there will be no tourists. If the Park is not attractive to tourists, there will be fewer tourists and there will be fewer jobs.*

Despite the fact that tourists who visited the Delok (Rh. Ngumbang) seldom visited the national park for the reason that they have all their recreational needs outside the park (see item 4.7), they believe that the main reason for tourists visiting their longhouse was the existence of the park. The Rh. Ipang residents gave an example of how the tourist area has lost its appeal due to degradation in the environment. A spokesperson said,

*It [Batang Ai National Park] is very important for tourism as it protects the environment and wildlife, which attract tourists. Take the example of Stamang*
and Sepaya in the Engkari River, now there are no tourists due to logging in the area.

Despite no tourists visiting the longhouses in the resettlement areas and Rh. Rimong village in Lubok Antu, 94 per cent (n = 193) of the individual respondents agree or strongly agree that it is important to protect the forest area next to their longhouse in order to continue to attract tourists. Only two per cent disagree. In this context, those in the resettlement areas were referring to the forest areas next to their old longhouse in Ulu Batang Ai. This again emphasises their beliefs that protecting the environment, the forest and wildlife is very important to continue to attract tourists to Batang Ai.

6.4.6 Summary of section

The residents in Ulu Batang Ai believe that it is important to protect wildlife for future generations and that it is important to protect Batang Ai National Park to ensure a good environment. They also believe that Batang Ai National Park is important for the protection of wildlife. This indicated that the longhouse residents in Ulu Batang Ai have a good understanding of conservation. This is expected as the Forest Department conducted extensive dialogues and conservation education programmes with the longhouse residents prior to and after the gazettlement of Batang Ai National Park.

A majority of the longhouse residents in Ulu Batang Ai have a fair understanding of the Park Regulations and their privileges over the park. There is some misunderstanding of privileges to hunt in the park. The Rh. Endan residents mentioned that they were only allowed to hunt wild pig for their own consumption, which is not the case as hunting privileges include any species of wildlife not listed as protected, or totally protected under the Wild Life Protection Ordinance, 1998.

25 Stamang and Sepaya are Iban longhouses in the Engkari which tourists have visited since early 1990. Logging operations reached Ulu Engkari in about 1995 resulting in muddy water in the Engkari. Around that time the two longhouses were rebuilt with concrete and lost their traditional image. Tour operators shy away from these destinations for the reason that tourists want to see traditional Iban longhouses (Jihen, 2001). The locals attributed the decline in tourism to muddy water. The degradation of the environment does contribute to the decline in tourism to these longhouses, however it is not the sole reason for the decline.
Initially, the Forest Department was very strict in monitoring the exercising of privileges by the local people and people without privilege were refused entry even if they were accompanying the local with privileges. When exercising their privileges, the local people were required to register on entry and upon exit and to report their catch -- a system to check that only people with privileges were allowed to enter, and to monitor the rate of hunting and species of wildlife taken.

Recently, records of movements of local people with privileges entering the park were not updated, which reflects the lack of commitment on the part of the Park Officers in enforcing the regulation. The lack of commitment on the part of the Park Officers means that people with privileges who wish to contravene the regulations can get away with taking along their friends or relatives that do not have privileges over the park. Some members of the longhouse residents interpret this as changes in Park Regulations, which they believe are easily changed. They were referring to the ease with which people without privileges were accompanying locals with privileges to hunt, fish and gather forest produce from the park.

A sizable group (43%) believe that there is no poaching in Batang Ai National Park, while 32 percent believe that there is poaching. The residents in the resettlement schemes generally reported that they ‘do not know’. The split in opinion might be for the reason that illegal hunting and fishing by people without privileges were done together with those with privileges. Observations by the Chairman of Koperasi Serba Guna suggest that people without privileges over the park seldom, if ever, enter alone. They accompanied people with privileges, this may be seen by some as poaching and by others as exercising of privileges.

A majority (55 %) of the residents in Ulu Batang Ai believe that people with privileges should be allowed to hunt, fish and gather forest produce as much as they want for food. The key informants from among the residents in Ulu Batang Ai do not agree. Their opinion was shared by 30 per cent of the communities. They suggest open and closed seasons, designated areas for full protection and areas where certain longhouses can
exercise their privileges. The longhouse spokesmen pointed out that exercising of privileges by local people should be regulated rather than as much as they wanted and that the Forest Department should be very strict in implementing the regulation. A large majority (70%) believe that there should be no hunting near tourist facilities such as jungle trails for safety reasons. There is no significant difference in beliefs about exercising of privileges between locations or between occupations which indicated that the longhouse residents shared similar beliefs regardless of location or occupation.

Most respondents, (89%) in Ulu Batang Ai believe that Batang Ai National Park provides employment opportunities for them and also their children in the future. They also believe that Batang Ai National Park benefits Sarawak in general and tourists more that it benefits them. To the longhouse residents in Ulu Batang Ai, Batang Ai National Park is the main reason why tourists visited their longhouse. Some members of the the resident mentioned that without Batang Ai National Park there would be no tourists. Longhouse residents in the Delok River shared this opinion even though all the recreation needs of tourists are available outside the park and that tourists visiting the Delok River seldom visit the park.

Overall, the residents in Ulu Batang Ai believe that Batang Ai National Park is important for the protection of the environment, forest and wildlife. They believe that tourists visit Batang Ai because of Batang Ai National Park, and that the park benefits them and their family.

6.5 TOURISM IN ULU BATANG AI

The Government Agencies expect tourism to benefit the local communities. The Chief Executive Officer of the Sarawak Tourism Board said,

We would like the local people to benefit, ... it makes no sense, if we know that the local people are not going to benefit in any way, for us to talk about conservation,
talk about ecotourism, nature tourism and all that, because it would be very short sighted if we just go on developing areas or going into areas to promote nature tourism, and the local people are not involved and they are not benefiting.

He emphasised that they should be partners in development. He said,

... we have to take them as partners in developing the area ... and for those [longhouse communities] who have not understood the intention maybe they need a little bit more of an awareness programme.

Back in 1990, the National Park and Wildlife Division of the Forest Department through its Education Extension Unit introduced the concept of conservation and tourism to the longhouse residents in Ulu Batang Ai. The Director of the World Conservation Society, Malaysia Programme, the then head of the Education Extension Unit in the National Park and Wildlife Division of the Forest Department said,

The main reason why the programme was created in Batang Ai was to help with the transition so that the park would be accepted by the local people. The ... impact [outcome] was the understanding that the Park was crucial to their needs and also that tourism as a form of non-consumption use ... was going to help the local communities, as opposed to things like logging and other forms of consumption industries, like harvesting.

One of the assumptions made by both the authorities and the longhouse residents was that tourists would come if they built facilities for them. This was the case with the tourist lodge built adjacent to Rh. Ayum in Ng. Bertik. The Director of the World Conservation Society, Malaysia Programme, mentioned that,

... there is an assumption which happens to us as well, you build it, people [visitors] will come. It doesn’t work that way, a big flaw on our part was the misunderstanding of how tourists behave.
The Senior Research Officer, Wildlife Conservation Society, also identified this lack of understanding of how tourism works. He mentioned that,

"[There is]... lack of understanding of how [the] tourism sector works including among the people in the Forest Department. There is the assumption that if you build the tourist facilities, then the tourists will come. In general it doesn't work that way. Products have to be sold and if the product fits what people want, then it is relatively easy to sell, but if it doesn't then it isn't."

The main challenge with establishing tourism in Ulu Batang Ai was the expectations of the local people from tourism. A business partner of Borneo Adventure said,

"One of the problems is [local] people's high expectations. Their expectations are awesome. "That ... we are all going to be ... businessmen and that we will all be doing very well". The hardest part is to keep their expectations realistic, that we are only going to ... take ... maybe only a total of 100 people up there [for the first year]. Keeping these expectations realistic is very difficult."

The tendency of the longhouse residents to do what they thought the tourists wanted rather than what the tourists actually want, was also seen as a challenge. A business partner of Borneo Adventure said,

"... there is also the tendency to try and over sell themselves. Some of that we have to hold back, people trying to do things based on what they think the tourist wants. We don't attempt to dress something up that it isn't. It isn't a Cultural Village; it's attractive the way it is."

In the early 1990's Ulu Batang Ai was a predominantly rural shifting-agricultural community with very little formal education, or skills in and knowledge of the service industry. A business partner of Borneo Adventure said,
The other problem was moving it gradually, it was a very poor area, moving it from an area that has no ... boat facilities, moving it into an area that can actually handle large numbers of people [visitors], ... [and] building the accommodation that wasn't out of place in the longhouse area, but also that had enough facilities to help to give people a bit of comfort.

6.5.1 Where longhouse tourism worked, and where and how it failed

The experience of three longhouses where tourist lodges were constructed adjacent to the longhouses is discussed to illustrate situations where longhouse tourism worked, or failed in Ulu Batang Ai. In 1990 the inhabitants of Rh. Endan in co-operation with Borneo Adventure built a tourist lodge adjacent to their longhouse, but it has not been used for quite a long time (Jihen, 2001). A hundred metres down river of Rh. Endan is Rh. Ayum at Ng. Bertik. In 1998 a tourist lodge was built next to Rh. Ayum, Ng. Bertik by Koperasi Serba Guna Ulu Batang Ai, referred to as the Cooperatives’ lodge in this report. It was seldom used because tourists seldom visit this longhouse. Rh Ngumbang has been a popular longhouse tourist destination since 1987 with Borneo Adventure as the sole tour operator bringing tourists there (Jihen, 2001). Borneo Adventure built the tourist lodge adjacent to Rh. Ngumbang longhouse in 1987.

6.5.1.1 The Rh. Endan experiences, why longhouse tourism failed

One of the main reasons why tourism in Rh. Endan failed was identified by the Managing Director of Borneo Adventure and the chairman of Ng. Sumpa Tourism Committee as a lack of people living in the longhouse, as well as a lack of communal cooperation within the community. The Managing Director of Borneo Adventure mentioned that the social fabric of a community is an important factor in the success or failure of longhouse tourism. He said,

There exists a strong social fabric within the longhouse otherwise it wouldn’t work. That [is] why some longhouses have not worked, the social fabric was not cohesive enough .... Unfortunately the Tibu [Rh. Endan], ... didn’t work very
well. The Tuai Rumah\(^{26}\) died and it was a set back. The Tuai Rumah was the driving force.

In 1989 there were 16 biliks (families) living in Rh. Endan. During the time of the survey, there were only four families living there. Most families left the longhouse for the Skrang resettlement scheme in 1992. The Chairman of Ng. Sumpa Tourism Committee pointed out that too few people in Rh. Endan were the reason why longhouse tourism failed in Rh. Endan. He also pointed out that there should be at least six to seven families in the longhouse to be able to provide a satisfactory service. He said,

*If there are few people in the longhouse the visitors are also not happy. If there are ... people [tourists] coming and there are not enough people to welcome them, ... it is not necessary that there be a cultural show or something like that, but there must be people to welcome them.*

### 6.5.1.2 The Rh. Ayum experience, why longhouse tourism failed

Jihen (2001; p. 44) suggests the community of Rh Ayum charges much higher rates for various services, “... discouraging tour operators from visiting the community”. Rh. Ayum at Ng. Bertik was not a permanent residential dwelling. Most of the occupants were residing at the resettlement scheme and only returned to hunt, fish and gather forest produce. After the construction of the tourist lodge (Cooperatives’ lodge) adjacent to the longhouse, they also returned when there were visitors. The chairman of Kooperasi Serba Guna Batang Ai mentions that the cooperatives’ lodge was mainly used by organised school groups and the local university. A number of reasons contributed to the failure of tourism in Rh. Ayum. The chairman of Kopreasi Serba Guna Batang Ai mentioned that,

*Tour agents such as Borneo Adventure stay in their own lodge and those from the Resort go on day trips [to Batang Ai National Park]. The Resort does not want their guests to stay there [Cooperatives’ lodge] because if their guests love it*

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\(^{26}\) Wong Tibu longhouse was called Rh. Sumbu. When he died in 1991 En. Endan was made headman and was hence called Rh. Endan.
there, they may not want to stay in the Resort anymore. It is because we do not have a proper agent and no agency bringing tourists ....

Another thing is, that ... [other tour operator], goes to Menyang. If he does go up there [Ulu Batang Ai], he goes to the national park. Lots of people want to see the national park but don’t stay overnight in the Cooperatives’ lodge, and why? It is because the tourist agents take them to their own lodge. That is the main problem for the Cooperative.

One other reason is that the people in that longhouse [Rh. Ayum] don’t organise their cultural shows properly any more. They often quarrel when visitors are there, they drink and quarrel and even quarrel with school children [visitors]. That is why people don’t want to go there any more.

Here, the main reason for failure is non co-operation with the tour agency bringing in tourists. Another reason is the lack of cooperation within the community --reflected in incidents of quarrelling and getting drunk, which drives away individual groups, such as school groups.

6.5.1.3 The Rh. Ngumbang experiences, how longhouse tourism works
Rh. Ngumbang have had tourists visiting their longhouse since 1987. They worked in co-operation with Borneo Adventure bringing in an average of eight hundred tourists per year to the longhouse. There are thirty families living in this traditional Iban longhouse. Results indicate that the residents gain economically from tourism to their longhouse. The Managing Director of Borneo Adventure said,

One of the reasons [for selecting Ng. Sumpaj] was that the people there really wanted tourism. They were very eager and have a pretty cohesive social structure there.

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27 Menyang is a tributary of Batang (river) Ai, just upstream of the Hilton Longhouse Resort.
The Rh. Ngumbang longhouse community has an intimate relationship with Borneo Adventure. Elaborating this relationship the Chairman of Ng. Sumpa Tourism Committee said,

Borneo Adventure is like a family to us and if there is any company that wants to come in [to this longhouse], I think they should inform Borneo Adventure first, then I can follow up with it.

The Managing Director of Borneo Adventure described the relationship as a ‘win-win’ situation. He said,

I always believed from the very beginning that we should be in partnership and I always told the community that we want to be partners with you. I always come up with simple things like, if you price yourself too high, I would not want to buy but if you price yourself too low, you don’t want to work. It has to be a win-win situation.

Being partners, there is mutual help and understanding. The Managing Director of Borneo Adventure commented that,

Another thing is a partnership and I don’t want a weak partner. I want you [longhouse community] to be strong [successful]. It takes time for you to be strong.

Borneo Adventure took the initiative to make the longhouse a strong partner through various initiatives. For example the longhouse residents were given the opportunity to provide transport for visitors. In doing so, it increased the operational cost but it allowed the longhouse residents to be more mobile. Borneo Adventure provided an interest-free loan to the longhouse residents for purchasing a boat and engine for transporting tourists. The Managing Director of Borneo Adventure said,
We could have stationed our own boat at the jetty and come up. The boat cost goes up that way [Longhouse residents bring a boat from the longhouse to pick up visitors], we think of the point that that’s where ... they make the money, ... and a way for them to communicate with the outside world, Lubok Antu.

To help with children’s education, Borneo Adventure initiated and contributed to an educational fund. The managing Director of Borneo Adventure said,

*The way out is through education. Basically if we are educated, then you have a choice but if you don’t have that, you don’t have a choice anymore. So what we did was a scholarship fund. It is not much, we put in RM 10 for each customer coming in. [It was] basically to help assist the longhouse people, to bribe them to send their children to school because basically our education is free, but they need to buy uniforms, shoes, etc. We give that fund to the family so that they can have an extra bit like uniforms.*

*And then what we did was improve on that; we bribed the kids themselves. In the top five positions, we give bonus. We not only want them to go to school but we want them to excel. And then if they go to college, they get more. That is how we did it, ... and I am proud that we have three or four graduates*28 now.

Borneo Adventure gauged their success as partners in that the Rh. Ngumbang residents are protecting their interest. The Managing Director of Borneo Adventure added,

... the longhouse[community] are the ones who protected our interest and in the end when other tour operators want to come up, they said no. They are the ones who actually rejected them, not us. Up to now we never signed an agreement, ... it’s always a gentlemen’s agreement because if they are unhappy with the things we have done, they can always kick us out anytime.

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28 The first graduate from among the longhouses communities in Ulu Batang Ai with a Bachelor Degree was from Rh. Ngumbang. Currently there are a few more attending college and all are from Rh. Ngumbang.
To the longhouse residents, the most important factor is mutual trust and understanding. The Chairman of Ng. Sumpa Tourism Committee compared this with owing money. He said,

*The most important thing in the longhouse is that they [Tour Agencies] must not owe people [longhouse community] money. Owing them for one or two days is all right but not one or two years. Actually you cannot owe money to the people in the longhouse. If you owe them even one ringgit or two ringgit, they will be upset.*

Borneo Adventure recognised the importance of prompt payment to the longhouse residents. The Managing Director of Borneo Adventure said,

... *we never owe them money because they need the money more than we do. We never owed them the money, though sometimes we are short, within a week we paid up. We actually paid above the going rate.*

In Rh. Ngumbang, longhouse tourism worked largely because of their co-operation with a tour agency that brings in tourists regularly. Mutual understanding and respect between the longhouse residents and the tour operator helped strengthen the relationship. The co-operation as partners and the desire for a win-win situation has benefited both parties.

### 6.5.2 Where conservation benefits from longhouse tourism

The experience of Borneo Adventure in Rh. Ngumbang indicated that conservation could benefit from tourism in Ulu Batang Ai. A business partner of Borneo Adventure explained that initially Borneo Adventure was looking for tourism products different from those provided by other tour operators. He said,

*Batang Ai was chosen because we were looking for components that had wildlife, the orang utan, a pleasant setting as well as the longhouse. That area [Batang Ai] has all these components.*
Borneo Adventure did not impose new ideas on the longhouse community but worked to encourage them to realise them themselves. The method used by Borneo Adventure was "... to show the local people that visitors were willing to pay to see wild orang utan, and .... [the] local village guides accompanying tours are tipped over and above their daily wage when orang utan are seen" (Yong and Basiuk, 1998; p.7). The residents view orang utan as a precious commodity, keeping track of their movement and reporting poaching in the area to the authorities (Yong and Basiuk, 1998). The Managing Director of Borneo Adventure said it took fourteen to fifteen years for the longhouse residents to realise the importance of protecting wildlife to attract tourists. He said,

We know of course there is orang utan up there. We never promote orang utans. [We] ... quietly ... depress [avoid promoting them] ourselves. We did that because we thought it would be very irresponsible if we did that, open it up before the people are ready, and it took them 14 to 15 years. Now we can do it. It took a while for people to realise ... that this area is quite precious to us, we would like to leave it to our children and children's children. They realise the value of the place and now they are the ones very keen to conserve the place.

The Chairman of Ng. Sumpa Tourism Committee commenting on his reaction towards tourism and ideas of conservation said,

... in the past ..., I was also questioning why the company stopped us from killing this, killing that. This was in the first two or three years back in 1987 to 1990, when there were still very few tourists coming to our place.

I would like to suggest that maybe you people, the boss from Kuching should tell those who have not accepted tourism to give it a try. Let them give it a try for two or three years not to kill orang utans\(^{29}\) or other animals. Let them try just for two years only, just like ... Mr. Philip Yong told our longhouse. He told the people

\(^{29}\) Hunting of orang utan is taboo to the Iban people in Ulu Batang Ai. In the past, sporadic hunting was carried out by outsiders (Yong and Basiuk, 1998).
that we are now dealing with tourism so we should give it two years, just two years and you will see the difference. [Philip Yong told the longhouse community] “I am not stopping you people from killing animals, or to fish but you should reduce, reduce the killing of animals and fish, and improve your service”. He was saying you couldn’t stop 100 per cent, but to reduce, reduce, reduce bit by bit.

In Rh. Ngumbang, the longhouse residents realised the importance of protecting wildlife to attract more tourists. Thus, the conservation goal is met as both the tour agency and the longhouse worked to provide a satisfactory service to customers.

6.5.3 Tourism potential in Ulu Batang Ai

The Ecotourism Officer of the Ministry of Tourism pointed out the importance of Batang Ai as tourism destination in Sarawak. He said,

Batang Ai ... has always [been] one of the key areas in the Second Tourism Master Plan to be promoted, ... comprising the whole area, Lubok Antu and also all the Batang Ai National Park.

The Chief Executive Officer of Sarawak Tourism Board shares the Ecotourism Officer of the Ministry of Tourism’s view that Batang Ai is an important tourist destination in Sarawak. He mentioned that,

One important indication is the fact that the State Government agreed to build the airstrip in Batang Ai. [It] ... indicates that we still look at Batang Ai as an important destination but we have to be very sensitive too, being ... nature and cultural product, both are sensitive products.

A business partner of Borneo Adventure suggests that Ulu Batang Ai has the potential to be a cultural, natural and adventure destination. He said,
... it is up there in terms of what it has to offer as a combination of nature, cultural aspects as well as the opportunity to do some hiking too. In terms of high adventure, yes, it is up there. You can go on a six to seven days hike if you want but you can also relax. It has a lot of appeal.

The Ecotourism Officer in the Ministry of Tourism suggests the tour operators did not realise the full potential of Batang Ai. He said,

\[ I \text{believe a lot of them [tour operators] have not seen the full potential of Batang Ai. I think because ... they believe its too lengthy to go but I guess we have to market it to the right people and not marketing it just openly because people who want to go to Batang Ai, they have to be willing to spend time travelling to Batang Ai and then this travelling is part of the experience.} \]

A Senior Research Officer with the Wildlife Conservation Society pointed out the tendency of local people to link the economics of tourism with foreign tourists and failing to see the potential for domestic tourism, particularly with the urban Iban for Batang Ai National Park. However, he believed that there may be less demand for wilderness-type experience among Malaysians. He said,

\[ \text{... there is a tendency to think, at least where it comes to money that tourism has to be foreign tourists and marketing overseas is ... a very difficult and expensive business, [while] marketing domestically within the State is much easier, is less expensive. That could be tricky as well, because there is probably less demand for what you could call a primitive experience among Malaysians and I think if I was doing it again, we would try to go for [the] domestic market and perhaps ... the urban Iban.} \]

The Chief Executive Officer of Sarawak Tourism Board pointed out that in the future, Batang Ai could be appealing to domestic tourists particularly the urban Iban in relation to their heritage. He mentioned, "... if we can be excited about it, our children will
definitely ... be interested". Batang Ai has an advantage in the sense that the ecotourism component can be built into projects implemented by ITTO. The ITTO Project Leader, Sarawak Programme said,

... ITTO can contribute toward that [tourism] through a number of ways; one, through training; two, organisation of workshops; three, the development of local cottage industries by way of handicrafts. One of ITTO’s intentions is to make use of the non-timber resources, to develop these non-timber resources, to improve the social economy and their livelihood.

ITTO’s idea is to get such facilities [herbal gardens, medicinal plant gardens and other attractions] established and the local people can manage it. If this is properly ... managed, if the set up is interesting, ... I am sure that there is no problem in attracting the tourists to go there.

6.5.4 Tourism and conservation, the balancing act

The literature review provided cases where tourism brought about positive or negative effects on conservation depending on the intensity of development and the number of visitors. The local Iban communities attributed benefits derived from tourism to the existence of Batang Ai National Park. Rh. Endan and Rh. Griffin mentioned that Batang Ai National Park does not bring much benefit to them as few tourists visit their longhouse. The experience of Rh. Ngumbang shows that tourism can bring about positive attitudes towards conservation.

A number of key informants pointed out the potential danger of tourism to conservation. A Senior Research Officer with the Wildlife Conservation Society pointed out the potential impact of long-distance hiking involving a few nights camping if promoted in Batang Ai National Park. He said,

I am not sure if people in Sarawak understand why people, foreigners should want and do it [treking in Batang Ai National Park]. There is a problem of
overnight camps, ... we don't ... [want] everybody [parties] going through ... cutting poles [for constructing camps], which rot after a few months, and the next party still have to cut more poles.

Permanent camps, probably not like the one we had in Mulu\(^30\), ... but what we could do perhaps is to put metal poles so that people could stick their camp sheet over and obviously guiding and the rest of it.

From a conservation point of view, the fewer people living in or adjacent to Batang Ai National Park, the lower is the pressure on the natural resources and the better it is for conservation. Jobs created by tourism may attract people back to or adjacent to the park. During the community group interviews, two of the longhouses in the resettlement scheme (Rh. Betok and Rh. Rumpang) mentioned that they were willing to return to the Ulu if there were job opportunities available. The Wildlife Conservation Society research officer elaborating on this issue mentioned that,

*It is to avoid what happened in Mulu where you actually got urban migration into the area immediately around Mulu. People coming looking for jobs, a classic urban migration pattern. The problem is, unlike people migrating to Jakarta or to Manila, they continue to use the natural resources and to farm and hunt outside and if they can, hunting inside so we want to try to avoid a town being created outside at the edge of Batang Ai National Park, like Mulu.*

*I am not quite sure how to do it. One way might be to make it quite clear who is and who is not going to get job. One of the problems with urban drift and in what happens in Mulu is that people come along in hope that if they hang around, ... they will get casual jobs and permanent jobs in the long term.*

\(^30\) Permanent camps in Gunung Mulu National Park are made of sawn timber with metal roofing, fitted with a built-in cooking place, gravity feed tap water and pit toilet.
Somehow it is a bit odd that we do not get it [urban migration] in the big towns itself, but we get it in places like Mulu.\(^{31}\)

### 6.5.5 Summary of section

The State Government would like the longhouse communities to benefit from tourism. However, tourism businesses are handled by tour operators with little interference from the government. Co-operation between tour operators and local residents at the destination depends on the negotiations between the two parties without any input from the government. Thus, the success or failure of longhouse tourism depends on co-operation between the two parties.

One of the misconceptions of the people in the tourism industry in Sarawak was the assumption that tourists would come if they built the facilities. A tourist lodge built by Kooperative Serba Guna Ulu Batang Ai adjacent to Rh. Ayum was based on the idea that tourists would come if they built the lodge. However, the lodge was seldom used as Kooperative Serba Guna Ulu Batang Ai did not have co-operation with a tour agency and tourists did not turn up at the lodge. This was a situation where longhouse tourism failed.

The other misconception about tourism in Ulu Batang Ai was the high expectations of the longhouse residents of tourism. They expect tourism to be the answer to all their problems and that they would all be businessmen. However, tourism does not, and will not be the answer to all their problems. A major challenge for tourism in Ulu Batang Ai was the lack of experience among residents. It took a lot of effort and time to get them to the level to be able to provide satisfactory service to tourists. This is where the commitment of the tour operators is crucial in making longhouse tourism work in Ulu Batang Ai. Longhouse tourism in Rh. Ngumbang worked because Borneo Adventure, an efficient and dedicated tourist agency, was committed towards a win-win situation with the longhouse residents. They worked as partners, and mutual respect and understanding was the governing principle.

\(^{31}\) Sarawak does not have major problems with urban migration, hence the reference to Jakarta or Manila.
Communal co-operation is crucial for making longhouse tourism work. Longhouse tourism in Rh. Ayum and Rh. Endan failed partly because there was a lack of communal co-operation among the members. In Rh. Ayum, the incidents of drunkenness and quarrelling among members of the community have driven away the few independent tourists that used the lodge. In Rh. Endan, the residents lost the influence binding them together with the death of the late headman Tuai Rumah Sumbu, resulting in the lack of communal co-operation making it difficult for tour operators to conduct tours to the longhouse. Longhouse tourism worked in Rh. Ngumbang because of the strong communal co-operation among its members brought about by the guidance of the headman and the Ng. Sumpa Tourism Committee.

Another important component was that there should be at least six or seven families living in the longhouse to be able to provide services to tourists. Longhouse tourism in Rh. Endan and Rh. Ayum failed partly for this reason. In Rh. Endan there were only four families and in Rh. Ayum, the residents were living in the resettlement scheme and only returned when there were visitors using the lodge.

As seen in Rh. Ngumbang, conservation could benefit from longhouse tourism. Through their co-operation with Borneo Adventure and exposure to tourism, the residents of Rh. Ngumbang realised the importance of wildlife to attract tourists. They have taken the initiative to protect wildlife, thus the conservation goal is met as they strive to provide satisfactory services to customers.

For the State Government, Batang Ai is an important tourist destination. The Chief Executive Officer of the Sarawak Tourism Board pointed out that the State Government plan to build an airstrip in Batang Ai is an indication of the importance of the area as a tourist destination. The potential attraction of the area is based on its culture, nature and adventure covering both the foreign and domestic markets. There are opportunities for long distance trekking involving a few nights in Batang Ai National Park. Batang Ai National Park has potential for domestic tourism, particularly among Iban in urban areas in relation to their heritage -- their homeland. The presence of ITTO projects in Batang
Ai can contribute to tourism in the area through training, workshops and development of non-timber forest produce such as handicrafts. This is in line with the ITTO mission to promote the use of non-timber forest products and to promote the socio-economic status of local people.

Tourism could have positive or negative impacts on the environment. The residents of Rh. Endan and Rh. Griffin believe that Batang Ai National Park does not bring much benefit to them as they receive few tourists in their longhouses. However, over emphasising the economic benefits of tourism may have negative impacts on conservation. For example, long distance trekking with overnight camping in Batang Ai National Park involves cutting poles for constructing camps. If such practice is allowed to continue, it will impact on the vegetation at camping sites. Thus, park management must consider erecting permanent camps and designate areas for camping to reduce negative impacts on the environment.

Tourism can create jobs which benefit the local communities. However, job opportunities can attract more people in, or adjacent to the park, as experienced in Gunung Mulu National Park. The more people living in, or adjacent to the park, the higher will be the pressure on the natural resources which may be counter productive to conservation. Thus, it is crucial that park management recognises the balance between conservation and tourism in order to ensure that the objectives of the park (benefits for local people and conservation goals) are met.

6.6 SUSTAINABILITY OF HUNTING IN BATANG AI NATIONAL PARK

Bennett and Robinson (2000b) suggest that biodiversity is declining in many forest areas and hunting of many species in tropical forests is no longer sustainable. For the tropical forest to be sustainable for people depending exclusively on wild meat for their protein requirements, the carrying capacity is one person per square kilometre (Robinson and Bennett, 2000). The total number of people with privileges over the use of resources in Batang Ai National Park far outstrips the sustainable carrying capacity of the park if they were to depend solely on wildlife for their protein requirement. The population of the
seven longhouses with legal right to hunt, fish and gather forest produce from the park is 592 (Appendix 2). This is double the sustainable carrying capacity of the park at 240 people if they depend solely on wild meat from the park. This excludes those that have privileges over the park, but are currently residing in the resettlement schemes in Skrang and other longhouses. The total number of people with rights to hunt, fish and gather in Batang Ai National Park would easily exceed one thousand people, counting those that are currently living in resettlement schemes, other longhouses through marriage, and in town. Their cousins living in and adjacent to the park recognise them as legitimate privileges holders and welcome them in exercising their rights, if they return to the Ulu.

Robinson and Bennett (2000) also suggest that the harvest of game meat generally must be less than 200 kilograms per square kilometre per year for most tropical forests to have a sustainable animal population. In neotropical forests, a harvest of 152 kilograms of wild meat per square kilometre per year is considered to be sustainable. For the purpose of this thesis, the unit figure of 152 kilograms of wild meat per square kilometre per year is used in the calculations to determine the sustainability of the harvest of wild meat. This value is taken for the reason that there is no study on this subject in the Southeast Asian forest that is applicable to a tropical forest area.

Batang Ai National Parks’ regulations require that the local communities with privileges to hunt, fish and collect forest produce from the park must seek the approval from the Controller of Parks before they can exercise such privileges. They are required to register their intentions at Ng. Lubang Baya Ranger Station by completing a form referred to as ‘Records of Movement of Local People’. The record includes name, time and date of entry, and tools or weapons brought along during the trip. The applicants have to sign in on entry and sign out when exiting the park. They have to report all their catch. It serves as a means to prevent non-privilege holders accompanying locals with privileges as well as stopping any illegal entry, and to monitor the amount of wildlife harvested. These hunting records from 1988 to 2001 are used to estimate the total number of wildlife killed by hunters (Table 29).
The weights used by Caldecott (1988) are adopted as an estimate of weight of hunted wildlife. Caldecott (1988) suggests the weight of commonly hunted species such as wild pig was 60 kg for male and 42 kg for female, *rusa* (sambar deer) at 91 kg for male and 72 kg for female, *kijang* (barking deer) at 23 kg for male and 25 kg for female. The records of hunted wildlife in Ng. Lubang Baya Ranger Station does not include the sexes, thus for the purpose of this thesis, the average weight of male and female is used in calculation. The weight of wild pigs is 51 kg, *rusa* 81.5 kg, *kijang* 24 kg.

Table 29: Hunted species taken from Batang Ai National Park by local communities

<table>
<thead>
<tr>
<th>Year</th>
<th>Hunting trips</th>
<th>Number of hunted species</th>
<th>Total weight of hunted wildlife (kg)</th>
<th>Weight per trip (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Wild pigs</td>
<td><em>Rusa</em></td>
<td><em>Kijang</em></td>
</tr>
<tr>
<td>1998</td>
<td>78</td>
<td>74</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>1999</td>
<td>50</td>
<td>47</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>2000</td>
<td>75</td>
<td>120</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>2001</td>
<td>44</td>
<td>54</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

* Long-tailed macaques weigh 5 kg and bears weigh 40 kg (Caldecott, 1998).

The lower number of trips in 2001 may be due to the residents of Rh. Ayum having moved to resettlement schemes in Lubok Antu and consequently making fewer hunting trips to the park.

For Batang Ai National Park to be sustainable in animal population, a maximum weight of wild animal that could be harvested is 36,480 kg\(^{32}\) per year. Hunting records at Ng. Lubang Baya Ranger Station indicated that total harvest per year is less than twenty per cent of the production rate for Batang Ai National Park.

Hunting records also indicated that a majority of those hunting in the park were from Rh. Ayum. Eighty-eight per cent of trips in 1998, 92 per cent of trips in 1999, 89 per cent of trips in 2000 and 95 per cent of trips in 2001 were by people from Rh. Ayum. On average

\(^{32}\) 36,480 kg is derived from the total area of Batang Ai National Park (240 square kilometers) multiplied by the allowable harvest rate of wild animal in tropical forest for it to be sustainable (152 kg per year).
they harvested 60 kilograms of wild meat per trip in 1998, 62 kilograms in 1999, 89 kilograms in 2000 and 71 kilograms in 2001. Inhabitants of the other longhouses very rarely hunt in the park. This was also reported during the community group interviews where the other longhouse residents indicated that they hunt, fish and gather next to their longhouses. The Rh. Ayum was the only longhouse that mentioned that hunting was more successful after the gazettement of the park. Hunting records in Ng. Lubang Baya Ranger Station show that there is some increase in the average weight of wildlife hunted per trip from 1998 to 2001, supporting claims made by the residents of Rh. Ayum (see section 6.2.3).

Residents in the Delok River and Rh. Griffin mentioned that they hunt in the forest next to their longhouse and that hunting success remained unchanged. Records of hunting in Ng. Lubang Baya Ranger Station support their claims that they seldom hunt in the park. One possible reason is that it is too expensive for them to travel to the park and that the forest areas next to their longhouses still support the wildlife they need. Harvesting of wild meat in Batang Ai National Park can be sustainable if the current rate of harvest is not exceeded and if the park management is strict in enforcing the regulation so only permit privilege holders can hunt.

The forest area next to the longhouses in Ulu Batang Ai has been able to provide the longhouses with their requirements of forest produce including wild meat. Thus, if Batang Ai National Park is to continue to achieve its conservation objectives these forest areas must be able to provide the local residents with their requirements. In the event that these forest areas are converted into other forms of land use or they fail to provide the longhouse residents with their requirements (for reasons such as over harvesting of resources), the longhouse will then travel into the park to secure their needs. If this happens, Batang Ai National Park will no longer be able to maintain its conservation objectives. Thus, it is appropriate that the management of resources should go beyond the boundaries of the park into the forest areas surrounding the longhouses.
6.6.1 Summary of section

There are currently 592 people living near the park with privileges to hunt, fish and gather forest produce in Batang Ai National Park. This is more than double the carrying capacity of the park if they were to depend solely on protein derived from wild meat from the park. The total number of people with privileges to hunt, fish and gather forest produce from the park, including those that are residing in resettlement schemes, other longhouses through marriage and in urban centres would easily exceed one thousand people. This is far beyond the sustainable carrying capacity of the park.

Most of the longhouse residents in Ulu Batang Ai hunt, fish and gather forest produce in areas next to their longhouses outside the park. They claim that they seldom hunt, fish or gather forest produce in the park for the reason that they can get most of their needs from the area near their longhouses. Furthermore, the residents in the settlement schemes seldom travel to the Ulu to hunt, fish and gather forest produce for the reason that it is too expensive to travel, often beyond their means.

Only the Rh. Ayum residents frequently hunt, fish and gather forest produce from the park. They are the only longhouse residents which reported that hunting in Batang Ai National Park has been more successful since the gazettement of the park. Records of hunting in Ng. Lubang Baya Ranger Station seem to support their claims. This may be due to an increase of wildlife but equally may be due to changes in technology such as increase in use of shot guns or other factors not covered in this study.

In summary, hunting seemed to be more successful and sustainable since the gazettement of Batang Ai National Park. Hunting can continue to be sustainable in Batang Ai National Park if the Park Management continue to be strict in monitoring use by privilege holders and that the forests next to all the longhouses continue to provide the needs of those longhouse residents so that they do not have to use the park for such needs.
A majority of the longhouse residents in Ulu Batang Ai are rural farmers with no formal education, earning less than RM 100 per month. A majority had resided in Ulu Batang Ai for 18 years, which coincides with the time when they moved back to the Ulu after the construction of the hydroelectric dam (Meredith, 1993). Over the last ten years, three longhouses in the Ulu were deserted and only four families still reside in Rh. Endan. In most of the longhouses in the Ulu, the number of households either remains the same or has decreased over the last ten years (Table 8). This indicates that the forces pulling people out of the area into the resettlement schemes and cities has been much greater than the forces holding them in the Ulu (see section 6.1.6). The lack of facilities and job opportunities in the Ulu were the main reasons for the drift (Arman, 1997).

Population increases are appearing in areas where job opportunities exist. There has been an increase in the number of households from 23 in 1980 to 30 in 2003 in Rh. Ngumbang. This may be attributed to the job opportunities brought about by tourism in the longhouse (see section 6.2.5). Increases in the number of households were also registered among longhouses in the resettlement schemes.

Transportation was seen as a major factor contributing to the difficulty in earning cash in Ulu Batang Ai before the construction of the dam. However, after the establishment of the Park, the total ban in trade of wildlife was identified as one of the factors contributing to the difficulty in earning cash.

The longhouse residents in Ulu Batang Ai still practise traditional methods of slash and burn agriculture, while those that live in the resettlement schemes practise a more sedentary agriculture such as wet rice cultivation, pepper gardens and vegetable gardening. To increase yields, those living in resettlement schemes used herbicides and fertilizers. The difference in farming methods practised in the Ulu and in the resettlement schemes were due to the availability of land for farming and the topography of the area. The abundance of farmland in the Ulu meant that the farmers could farm different plots...
every year. The steep gradients meant that the plots eroded rapidly, and were no longer suitable for further cropping, forcing the farmer to move. This is exactly the opposite in the resettlement schemes; the lack of farmland forced the farmers to farm the same plot over and over, however, flat ground allows the area to be cultivated using modern farming methods.

Only the Rh. Endan residents farmed within the boundaries of Batang Ai National Park. Residents in the resettlement schemes do not farm in the Park, as it is too costly to travel there. Generally farming in the Ulu remains successful, however, the Rh. Endan and the Rh. Griffin residents said that farming is no longer successful for the reason that there were too few of them to work the farm and that their crops were destroyed by wildlife. Farming in the resettlement schemes was more successful.

Harvesting forest produce is an important activity among all longhouses in Ulu Batang Ai. Forest produce harvested includes mushrooms, bamboo shoots, fern leaves and the hearts of palms. The longhouses in Ulu Batang Ai harvest forest produce from forest areas next to their longhouse. During the survey, only the Rh. Endan and Rh. Ayum collected forest produce from the national park. Residents in the resettlement schemes (with exception of the Rh. Ayum residents) seldom collect forest produce as there are few forest areas next to their longhouses and it is too costly to travel to the park. They obtained their supply of vegetables from their own vegetable gardens.

Hunting was an important activity for most longhouses in Ulu Batang Ai but not among those in the resettlement schemes. Hunting was done mainly by men using dogs and spears, or shotguns, and has been largely confined to forests next to their longhouses. The main species hunted were wild pigs, sambar deer, barking deer, mouse deer and civets. Over time hunting success remains much the same in Ulu Batang Ai. The Rh. Ipang residents reported that hunting is not as successful as previously. Their reason for the lack of hunting success was because of the presence of Rh. Changging who now shared the hunting area with them. The Rh. Endan residents attributed lack of hunting success to their physical condition, that they were too old for hunting. The Rh. Ayum residents,
however, reported that hunting has been more successful since the gazettement of Batang Ai National Park. Records of hunting by local people with privileges in the park showed that the residents of Rh. Ayum often hunt in the park (see section 6.6). The average weight of wild animals harvested per hunting trip has increased in recent years compared with 1998, thus supporting their claims that hunting has been more successful.

The residents in Ulu Batang Ai fish in rivers next to their longhouse. Most of them mention that fishing success remains the same as in the past. The Rh. Griffin attributed lack of fishing success to lack of fishing equipment and the Rh. Endan residents attributed their lack of success to overfishing by outsiders. There is a possibility of overfishing in rivers where they fish as other longhouse residents also fish there. Lack of the right equipment or inability to put in sufficient effort may also be factors.

More people participated in harvesting forest produce (70 %) than fishing (51 %) and hunting (35 %). This shows the importance of forest produce among the Ulu residents. The difference in the percentage of people who hunt and fish is probably due to the skills involved. Hunting requires more skill and physical strength than fishing, thus fewer people hunt. On the other hand, fishing may involve no more than setting a net across the river, leaving it over night and collecting the catch the next day. It is often done on the way to the farm and involves relatively little time, therefore, explaining the reason for spending less than one day per week by a majority of the people who fish.

The ‘other work’ done by residents in Ulu Batang Ai was in relation to tourism and homecrafts, or jobs with the government services. Work related to tourism involved transportation, accommodation, cultural performances and guiding. The Rh. Ngumbang residents were mainly involved with tourism activities, particularly in transportation. Other longhouse residents were involved in ‘other work’ such as homecrafts. Linking this with the income of the residents in Batang Ai, the Rh. Ngumbang residents earned a higher income than other longhouse residents. This is due to the presence of tourism.
There are no tourists visiting the longhouses in the resettlement schemes. In Ulu Batang Ai, the most likely place for the longhouse residents to meet with tourists is in their longhouse. There is no peak tourist period in Ulu Batang Ai. The Rh Ngumbang residents received the highest number of tourists to Ulu Batang Ai, brought about by their cooperation with Borneo Adventure. The most important tourism related work is related to transportation, followed by accommodation, cultural performance and guiding. Transportation brought in the most income followed by sale of handicrafts and other services. A majority of the longhouse residents received less than RM 100 per month from tourism. This does not mean that tourism work is low paying, but is because of the temporary nature of the work which is rotated among the longhouse residents. An individual may work for only a few days in a month, which is the reason for the low income from tourism.

The financial benefits from tourism are the ‘most liked’ aspects of tourism. A majority (51%) of the longhouses residents mention that there is nothing to dislike about tourism when asked which aspects of tourism they ‘most dislike’. The next ‘most disliked’ aspects of tourism were associated with tourist behaviour such as improper dress and lack of respect for their culture. All the longhouses that had some tourist visits wanted to see more tourists visiting their longhouse. Except for the Rh. Kasi residents who want tourists to visit their longhouse at a specific time, all the others said that tourists could visit at any time as long as they brought benefits to their longhouse.

The longhouse residents in Ulu Batang Ai believe that it is important to protect the forest and wildlife for future generations and that it is important to protect Batang Ai National Park. They had a good knowledge of the park regulations including their privileges to hunt, fish and collect forest produce from the park. A majority (55%) believe that they should be allowed to hunt, fish and collect forest produce from the park for food as much as they want. Thirty percent disagree, they believe that there should be an open and closed season, designated areas for full protection and for the different longhouses.
There are incidents of hunting, fishing and gathering by people without privileges in the park. However, these involved people without privileges accompanying local people with privilege over the park. In the past years, the park management was very strict in checking that privileges over the park were not abused and have refused entry to parties bringing along outsiders without privileges. The registration of movement of local people at Ng. Lubang Baya Ranger Station was used to check that only local people with privileges were allowed to hunt, fish and gather in the park. Recently, there has been a lack of commitment by the officers in the park in implementing the 'registration of movement of local people' in the park. Privilege holders could easily abuse their privilege without being detected by bringing along outsiders to hunt, fish and gather forest produce in the park. To some longhouse residents, this has been interpreted as a change in Park Regulations.

The State Government has identified Batang Ai as an important tourist destination for its culture, nature and adventure products. A plan to build an airstrip in Batang Ai National Park to enhance tourism indicates the importance of the area as a tourist destination in the eyes of those planning for tourism development. Batang Ai National Park is seen to have potential for both the foreign and domestic market, particularly among the urban Iban in relation to their heritage. The longhouse residents believe Batang Ai National Park is the reason for tourists visiting the area and their longhouses. They also associated Batang Ai National Park with job opportunities brought about by tourism. Thus, crucial for park management is a balance between conservation and tourism in order to ensure that the objectives of the park including benefits to local people are met. Job opportunities created by tourism may attract more people to the park which may put high pressure on the natural resources of the park, and be counterproductive for conservation.

Currently 592 people with privileges to hunt, fish and collect forest produce are living adjacent to the park. Counting all privilege holders including those that are residing in the resettlement schemes, in other longhouses and in cities, the figure may be over a thousand. This is far beyond the carrying capacity of the park if they all derived all their protein requirements from the park. Records of hunting which indicate that there has been
some increase in the average weight of wild animal harvested per hunting trip are not sufficiently reliable to suggest that hunting has been sustainable in Batang Ai National Park. Hunting may continue to be sustainable if the park management returns to strict monitoring of the exercise of privileges by local people in the park. Another crucial element to ensure sustainability is that the forest next to the longhouses in Ulu Batang Ai continues to be able to provide the longhouse inhabitants with their daily requirements so that they do not have to depend on the resources in the park. Thus, it is appropriate that the management of resources should extend beyond the boundaries of the park into forest areas surrounding the longhouses.
7.0 INTRODUCTION

The previous chapters have described and discussed the results of the study of local communities in and adjacent to Batang Ai National Park. This final chapter will integrate the key results and discuss implications of the study for tourism, conservation and park management.

The research has addressed the five objectives of the research. The findings indicate that local communities can benefit from tourism and that tourism can benefit conservation. However, benefits from tourism are dependent on the volume and distribution of tourists in Ulu Batang Ai. The local communities believe that tourism can benefit them, and that it is important for them to protect the environment, forest and wildlife in order to attract tourists. However, lack of opportunity for earning cash means that the well-being of the local communities continues to depend on the use of natural resources from the forest. The conservation goal can be achieved if there is sufficient benefit brought about by tourism (or other sources) to allow for reduced dependence by local communities on the natural resources from Batang Ai National Park. Alternatively, Batang Ai National Park can continue to maintain its conservation values if the forest outside the boundaries of the park, particularly areas next to the longhouses in Ulu Batang Ai continue to provide the longhouse residents with their forest produce requirements including wild meat. In the event that these forest areas next to the longhouses fail to provide them with their requirements, they will obtain it through exercising their rights and privileges in the park, which will ultimately reduce the conservation values of the park.

7.0.1 Study objectives

The over-riding goal of this research was to determine how local communities in and adjacent to Batang Ai National Park perceive conservation and tourism in the area, and if
tourism benefits local communities and conservation. The main objectives of this research were:

1. To describe the historical situation and developments (changing economy) of Ulu Batang Ai within a Sarawakian context.

2. To assess the beliefs of local residents about longhouse tourism, their perceptions of tourism impacts, and attitudes toward tourism.

3. To determine local residents’ views of tourism as a source of income and alternative to traditional collecting and harvesting of natural resources.

4. To determine actual income and its distribution and the implications of this for traditional use of natural resources.

5. To determine the amount of time local residents spent in tourism related activities and the benefits derived from tourism, compared with time spent and benefits from traditional activities of farming, and collecting and harvesting natural resources.

7.0.2 Theories relevant to tourism

Governments of developing nations vigorously promote tourism as they see it as a cure for economic malaise, and particularly for development of rural areas (de Kadt, 1979). Tourism provides benefits to local communities; however, tourism has the potential to inflict detrimental impacts on host communities (Hall, 1991). Tourism can weaken traditional norms among rural communities and destroy intimate friendly relations by turning acts of spontaneous hospitality into commercial transactions (de Kadt, 1979). Tourism also has the potential to damage the very resources on which it thrives, and in certain areas degradation of the environment has brought about a decline in the growth of tourism (OEDC, 1980). For tourism to continue to provide benefits, it is important that it be sustainable.
Tourism like any other industry has the potential to be controlled by people from the more developed centres, leaving the local people with few or no benefits and little incentive to protect the resources on which tourism depends (Keller, 1987). Local people are often deprived or not given the opportunity to participate and receive very few benefits from tourism (Yu, Hendrickson and Castillo, 1997).

Tourism promotion and packaging in Sarawak is focused on its people and their culture (Hon, 1990), its natural areas and adventures which are mostly located in protected areas (WCS and FD, 1996). In terms of people and culture, the Iban communities have been extensively promoted for their unique way of life and culture (Caslake, 1993) and organised tours to Iban longhouses has long been a major product (Zeppel, 1993).

7.0.3 Theories relevant to conservation

Protected areas alone are unlikely to maintain viable populations of many species because they are usually too small and isolated from one another, leading many biologists and conservationists to recognise their limitations (Noss, 1996). While protected areas are recognised as an essential part of any conservation strategy in almost every region of the world, much more land and water must be protected if conservation values are to be adequately achieved (O'Connor et al., 1990).

Putting aside protected natural areas large enough to ensure the success of species is often not possible and not acceptable to local communities. Conservation management efforts must be able to overlap into areas beyond the protected areas. Local communities often use protected areas for their subsistence, thus conservation strategies must incorporate human use in management strategies and where appropriate encourage joint management between conservation authorities and local communities (Archabald and Naughton-Treves, 2001; Gillingham and Lee, 1999; IUCN, 1992; Vandergeest, 1996).

Batang Ai National Park, with an area of 240 square kilometres, was gazetted for the protection of orang utan (Meredith, 1993a; 1993b). However the orang utan requires a minimum area of 300 square kilometres for continued survival (Bennett and Shebli,
Furthermore, local people with gazetted rights and privileges to hunt, fish and gather forest produce from the park are more than the carrying capacity of the forest (Ahmad et al., 1999; Tisen et al., 1999). These impediments constitute a paradox which undermines the conservation potential of the park. Furthermore, wildlife including protected species range beyond the park boundaries into surrounding forest areas where local communities farm, hunt and gather forest produce (Meredith, 1993a; 1993b). Thus, the cooperation of local communities is crucial in achieving the conservation objectives of the park (Tisen and Meredith, 2000). On the plus side, Batang Ai National Park shares a common boundary with Lanjak-Entimau Wildlife Sanctuary in Sarawak to the North and Betung-Kerihun National Park in Indonesia with a combined area of about one million hectares.

Park managers recognise that local communities should be able to benefit from the park if they are to support conservation efforts in the park (Ite, 1996). However, the traditional methods of resource use by local communities in the park may weaken the conservation values of the park (Hackel, 1999), prompting successive park managers to support tourism for the benefits it brings for local people. Park managers promote tourism to the local communities in and adjacent to Batang Ai National Park as tourism is seen to be compatible with the objectives of conservation in that it is believed it can provide benefits to the local communities while reducing their dependence on the natural resources from the park (Horowitz, 1998).

7.0.4 Communities in Ulu Batang Ai

The Iban live in traditional longhouses comprising of five to thirty families living in separate living apartments or *bilik* and derive their livelihood from planting hill rice, collecting forest produce, fishing, hunting and small-scale rearing of livestock (Yong and Basiuk, 1998). They rely on forest products for a variety of uses and have tailored their resources management according to availability of these resources (Horowitz, 1998). Traditionally, the management of resources is governed by customary law (*adat*) which is rarely broken for fear of divine retribution (Lembat, 1989). Certain communally-owned
forest areas are especially reserved and serve as reservoirs for wild animals, trees, and plants for exclusive use by the community and are not made available for farming.

Rice farming is very important to the communities in Ulu Batang Ai. An average family owns between two and five acres of rice field capable of producing between 1,600 and 2,500 kg of unhusked rice, equivalent to about 800 to 1,250 kg of rice (Arman, 1997). They are self-sufficient in terms of food and are able to obtain most of their daily requirements locally, however, they do not have a steady cash income (Yong and Basiuk, 1998; p.1). Some families obtained some cash from growing pepper, rearing of fresh water fish, involvement in tourism related work, and occasional selling of wild meat (Nyaoi and Bennett, 2002). Some families also obtain some money through younger members who work in logging companies, in factories, on offshore oilrigs, or as labourers in towns (Arman, 1997; Nyaoi and Bennett, 2002).

The people of Batang Ai have for generations been subjected to outside influences on their lives. In the late 19th and early 20th century they saw outside ideas imposed upon them; they were forced into the upper reaches of Batang Ai to escape the discipline of the Brookes' government (Ngo, 1997). Lack of farmland and intertribal war forced some groups to migrate to other areas in the Embaloh and the Rajang area (Ngo, 1997). In 1964, they experienced another outside influence on their lifestyle, when they were removed from the border areas of Sarawak to escape the infiltration of Indonesian military personnel (Ayob and Yaakob, 1991). Again in 1980, they were forced to move into resettlement schemes as they stood in the way of development for the hydroelectric generation scheme (Ayob and Yaakob, 1991).

Prior to the 1960s the migrations of Iban from Batang Ai were voluntary, either to escape tribal war, or to seek new territories with more game and better farmland. After the 1960s, they were resettled against their will and this created a lot of dissatisfaction with government policies. This led to misunderstanding and mistrust of government initiatives in the area and when Batang Ai National Park was proposed, it was seen as another one of the ways in which the government cheated the locals (Horrowitz, 1998).
The local Iban communities agreed to the establishment of BANP only after extensive consultation. Conservation education programmes were conducted, some involving the personal attention of the Minister in-charge of the National Park. The Batang Ai communities have also experienced socio-economic changes and have joined the rest of Sarawak in being influenced by the increasingly pervasive cash economy (WCS & FD, 1996). The local communities saw the need to send their children to school, to travel to town centres for medical attention and to be able to purchase goods to enhance their standard of living (Arman, 1997). They were no longer satisfied with subsistence benefits from the park, but wanted to be able to gain cash benefits from it. This has led some to disregard both the traditional customs or adat, and national park regulations to hunt, fish, and gather jungle produce for profits (Horowitz, 1998). It has led some to disregard park regulations and abuse their rights and privileges for the use of natural resources from the park for sale and trade (Horowitz, 1998). Tourism is seen as a way in which the local people could gain cash benefits while occupying their time and this could reduce their dependence on natural resources thus promoting the conservation values of the park (Nyaoi and Bennett, 2000).

7.1 METHODS FOR DATA COLLECTION

The main purpose of this study was to determine how local communities in and adjacent to Batang Ai National Park perceive conservation and tourism in the area, and if tourism benefits local communities and conservation. A questionnaire survey, community group semi-structured interviews, key informant interviews and researcher observations were all used to investigate whether or not tourism does benefit local communities and conservation in Ulu Batang Ai. This included gathering data on time spent doing traditional work, their time spent on tourism related work and benefits brought about by tourism and their beliefs about tourism and conservation. Researcher-administered questionnaires were used to gather information on the levels of agreement by local communities with a set of statements on tourism and conservation. The questionnaire also gathered information on time spent farming, harvesting forest produce, hunting, fishing
and other work. Views and opinions of the communities and key informants were obtained to cross check data collected from the questionnaire survey.

The multi-methods approach was based on the idea that the strengths and weaknesses of each method complement one another and, therefore increase the validity of the research process (Mathison, 1988).

7.2 SUMMARY OF RESEARCH FINDINGS

The study results presented below are organised according to the study objectives and evaluate the extent to which the objectives have been achieved.

7.2.1 Changing economy of Ulu Batang Ai

The longhouse communities in Ulu Batang Ai are farmers, practising traditional slash and burn shifting agriculture. All communities farmed in areas within an hour's walking distance from their longhouses. Only the Rh. Endan residents farm within the boundaries of Batang Ai National Park. Other communities residing in resettlement schemes -- Rh. Ayum, Rh. Rimong, Rh. Rumpang and Rh. Betok claim native customary land (NCL) within the boundaries of the Park; however, they did not farm these areas as it was too costly to travel to the Ulu. Generally, farming success (productivity) in Ulu Batang Ai remains the same as before tourism. However, members of some longhouses said that it was no longer successful. The main reasons for their lack of farming success were a shortage of labour as younger people have left to work in town and damage to crops by wildlife.

Those in the resettlement schemes practised modern methods of farming, some involving planting of wet rice over the same plot of land every year and the use of fertilizers and herbicides to increase yield. Farming success in the resettlement schemes was reported as high.
Harvesting forest produce is an important activity among longhouse communities in Ulu Batang Ai. Forest products such as mushrooms, fern leaves, ‘hearts’ of palms, fruits and other produce were the most commonly harvested. Other forest produce harvested by communities in the Ulu includes building materials (ramu), rattan (we) and illipe nuts. The yield from harvesting forest produce and the effort required remains the same as before tourism in Ulu Batang Ai. In the resettlement schemes, harvesting forest produce is no longer feasible as there is little forest near to the schemes and travelling to Ulu Batang Ai is very expensive and thus beyond the reach of most. The Rh. Endan and the Rh. Ayum residents were the only communities that collected forest produce within the boundaries of Batang Ai National Park, other longhouses relying on other forests next to their longhouse.

Hunting in Ulu Batang Ai remains an important activity which is mainly done by men with dogs and spears, and shotguns. The main species hunted were wild pigs, sambar deer (rusa), barking deer (kijang), mouse deer (pelanduk) and civets (musang). Generally, hunting success in Ulu Batang Ai remains the same as before the construction of the dam. Only the Rh. Ipang residents reported that hunting is not successful for the reason that they now have to share their hunting ground with the Rh. Changging residents. The Rh. Ayum residents reported that hunting in the Ulu was more successful after Batang Ai National Park was gazetted. Hunting is no longer an important activity among the communities in the resettlement schemes due to lack of hunting grounds near to the longhouse.

Gill net (pukat) and cast net (jala) were the main methods of fishing. The main species of fish taken were kepia, kulong, shrimps and frogs (pama). Fishing success remains the same in Ulu Batang Ai. The Rh. Endan and Rh. Griffin residents mentioned that fishing is no longer successful. Rh. Endan attributed the lack of success to over-fishing by outsiders, while Rh. Griffin attributed it to lack of fishing equipment. Fishing is no longer an important activity among the communities in the resettlement schemes as their longhouses are sited away from the main rivers and travelling to Ulu Batang Ai is expensive.
The communities in Ulu Batang Ai and the resettlement schemes spent less than one day per week doing 'work other' than the major tasks described above. The residents of Rh. Ngumbang listed work related to tourism such as transportation, helper, cook, and cultural performances. Those in other longhouses specified 'other work' connected with homecraft activities such as weaving baskets or *pua kumbu*, building or maintenance of boats or houses, and making *parang*. A number of respondents in the resettlement schemes specified 'other work' such as contract work, rubber tapping, and small businesses like merchandise retailing.

Earning cash before the construction of the dam in Ulu Batang Ai was very difficult due to the difficulty of transportation, as it took days to travel to the market to sell products. Transport to market become much easier after the construction of the dam, and earning cash was comparatively easier as some members of the community could sell produce in the market. For the Rh. Endans' residents, the lack of cash crops was the reason for their difficulty in earning cash, even though transport has improved. After the gazettement of Batang Ai National Park, a number of longhouse communities mentioned the total ban in trade of wild life as a reason for their difficulty in earning cash.

Communities in the resettlement schemes agreed that it is much easier to earn cash in the resettlement area compared with the time when they were living in Ulu Batang Ai. They attributed it to the presence of more job opportunities and access by road.

The forces pulling people out of Ulu Batang Ai to resettlement schemes and to urban areas are much greater than those to keep them in the Ulu (Arman, 1999). Lack of work opportunities and access to facilities such as medical and educational are forcing the people out of Ulu Batang Ai (Arman, 1999). Three longhouses in Ulu Batang Ai are now deserted and a number of others are losing their members. However, where work opportunities exist due to tourism, as in Rh. Ngumbang, the number of occupants has increased. This shows that tourism in rural settings has provided work opportunities and has contributed to an increase in population.
7.2.2 Local communities’ beliefs about longhouse tourism, their perceptions of tourism impacts, and attitudes toward tourism

There were no tourists visiting the longhouses in the resettlement schemes. In Ulu Batang Ai, Rh. Ngumbang received a regular flow of tourists through their co-operation with Borneo Adventure. Rh. Ipang received tourists brought in from the Hilton Batang Ai Longhouse Resort. The other longhouses in Ulu Batang Ai received very few tourists. Rh. Endan had tourists visiting their longhouse in 1990 to 1992, brought in by Borneo Adventure. However, they have received very few tourists since Borneo Adventure pulled out and focused their attention on Rh. Ngumbang. There is no peak tourist season in Batang Ai.

To the longhouse communities, the aspects of tourism they ‘most like’ are the financial benefits and knowledge they hope to gain from tourism. A majority of the longhouse communities reported that there was nothing to dislike about tourism. The ‘most disliked’ aspect of tourism was associated with tourist behaviour. Overall, the longhouse communities in Ulu Batang Ai perceived that tourism brings about benefits and that there was little to dislike about tourism.

The communities in Ulu Batang Ai did not experience any shortage of workmen due to tourism. However, communities in the smaller longhouses pointed out that there is a potential shortage if more tourists visit their longhouse, as there are only a few families remaining.

Only the Rh. Kasi residents would like to have tourists visiting their longhouse during a specific time only. All the other longhouse communities said that tourists could visit at any time, as long as they benefited from them. The residents of Rh. Griffin said that tourists could visit all day long, the more the better as long as they could benefit from tourism. This indicated their preference to work with tourism rather than on the farm. A number of individuals in other longhouses also indicated that they prefer tourism related work rather than working on the farm.
7.2.3 Residents’ views of tourism as source of income and alternative to traditional collecting and harvesting of natural resources

The communities in Batang Ai believe that tourism has created jobs in Batang Ai. A majority (89%) believe that tourism is good for their longhouse and that benefits from tourism are distributed widely throughout the longhouse. The communities in Ulu Batang Ai have a very high expectation of tourism. They expect tourism if it was to happen, to be the answer to all their problems and they will all be businessmen. However, tourism does not, and will not be the answer to all their problems. A major impediment to the establishment of tourism in Ulu Batang Ai was that the communities were very poor and it took a lot of effort and time to get them to the level of being able to provide satisfactory service to tourists. This is where the commitment of the tour operator was crucial in making longhouse tourism work in Ulu Batang Ai. Longhouse tourism in Rh. Ngumbang worked for the reason that Borneo Adventure was committed to a win-win situation with the longhouse residents. They worked as partners, and mutual respect and understanding were the governing principles.

One of the misconceptions of the communities in Ulu Batang Ai was a “cargo cult” type of assumption that tourists would come if they built the facilities. A tourist lodge built by Kooperative Serba Guna Ulu Batang Ai adjacent to Rh. Ayum was based on the idea that tourists would come if they built the lodge. However, the lodge was seldom used as Kooperative Serba Guna Ulu Batang Ai do not have co-operation with a tour agency and tourists did not turn up at the lodge. This was a situation where longhouse tourism failed.

7.2.4 Actual income and its distribution and the implications of this for traditional use of natural resources.

A majority (88%) of respondents in the study site are farmers earning less than RM 500 per month. Most of the respondents from longhouses in Ulu Batang Ai earned less than RM 100 per month. In 1997, the poverty line in Malaysia was RM 515 per month, the average income of the ‘hard-core’ poor was RM 158 per month, and the ‘poor’ was RM 403 per month (Berma, 2000). The earnings of the majority of the longhouse communities in Ulu Batang Ai falls within the ‘hard-core’ poor category, however, cash
income is not a clear indicator of their well-being as “... they are reasonably self-sufficient in terms of food and are able to manufacture most of their daily necessities from materials found locally” (Yong and Basiuk, 1998; p.1).

A majority of the respondents from the Rh. Ngumbang longhouse were in the RM 301 to RM 500 income bracket, which is above the average income of the people in Ulu Batang Ai. This marked increase in earning among the residents of the Rh. Ngumbang longhouse is attributed to the presence of tourism. However, the income is still below the poverty line and although they may receive additional money it is still too little to make a significant difference in their ways of life. Their well-being is still very much dependent on the traditional use of resources found locally.

Three of the longhouses in Ulu Batang Ai have been abandoned and others have lost members to resettlement schemes or urban centres. The main reasons for the drift to resettlement schemes and urban centres were the lack of job opportunities and facilities such as schools and medical clinics in Ulu Batang Ai. Only the Rh. Ngumbang and Rh. Ipang longhouses recorded some increase in population. Both have tourism – the Rh. Ngumbang longhouse received tourists through their cooperation with Borneo Adventure and the Rh. Ipang longhouse received tourists brought in by the Hilton Longhouse Resort. This indicated that tourism does bring about an increase in population in a rural setting, which, in turn, is brought about by an increase in job opportunities.

It is essential for the well-being of the communities in Ulu Batang Ai and for conservation of Batang Ai National Park that the forest areas next to the longhouses continue to be able to provide the local people with their daily requirements. In the event that these forests fail to be able to provide them with their daily requirements; their well-being will be at risk. They may instead turn to the park for their daily requirements by exercising their rights and privileges which may ultimately undermine the conservation value of the park.
7.2.5 Time spent in tourism related activities and the benefits derived from tourism compared with time spent and benefits from traditional activities of collecting and harvesting natural resources

There is no significant difference in time spent in traditional activities of farming, hunting, fishing and gathering forest produce by longhouses where there is tourism (Rh. Ngumbang and Rh. Ipang) compared with longhouses where there is little or no tourism in Ulu Batang Ai. This is because tourism in Ulu Batang Ai was a part-time activity, numbers of tourists relatively small and participation in tourist activities was rotated among the members of the community.

A majority of the respondents (52%) who had some tourists visiting their longhouse reported that tourists spent less than RM 100 per month in their longhouse. Higher tourist spending was reported by residents of Rh. Ngumbang and Rh. Ipang. All those that reported that tourists spent more than RM 2,000 per month in their longhouse were from Rh. Ngumbang. Rh. Ipang is the only other longhouse where the respondents reported that tourists spent more that RM 500 per month in their longhouse. Tourist spending in Rh. Ngumbang was calculated to be about RM 147,000 per year. This is expected as Rh. Ngumbang received tourists through their co-operation with Borneo Adventure and Rh. Ipang received tourists brought in by the Hilton Longhouse Resort while the other longhouses received very few tourists.

Tourism work in Ulu Batang Ai was part-time but not season dependent. It depends on the numbers of tourists and participation is rotated among the longhouse communities. The most important tourism related work is transportation, followed by accommodation, cultural performance and guiding. A majority were paid less than RM 100 per month for their work. This does not mean that tourism related work in Ulu Batang Ai is low paying but rather reflects the organisation and allocation of the work, which is rotated among the longhouse residents. Thus, each individual might work for a few days in a month, receiving less than RM 100 for the job, before returning to more traditional tasks while others have their turn working with the tourists.
Overall, tourism in Ulu Batang Ai has little or no effect on the traditional ways of life, and community well-being still depends on farming, hunting, fishing and gathering forest produce.

7.3 RESEARCH IMPLICATIONS

This study adds to the existing body of knowledge in the field of sustainability with respect to conservation and tourism. The results are relevant for Sarawakian authorities such as the State Planning Unit (SPU), Ministry of Tourism, Forest Department (National Parks and Wildlife Division), District Offices, Sarawak Tourism Board, Batang Ai National Park, Tour Operators and Local communities.

The results are also applicable to other protected areas in the State, particularly those that are similar to Batang Ai National Park in which local communities are granted privileges to use resources in protected areas.

7.3.1 Implication for tourism management and planning

Tourism in Ulu Batang Ai is in its infancy, possibly the early stage of involvement in a ‘tourist destination life cycle’ as proposed by Butler (1980). There were few tourists and the number of tourists at any particular time is much lower than the number of local people. Rh. Ngumbang with the most regular tourist visits received less than 1,000 tourists per year. Tourist visits are spread throughout the year and there is no peak visitation season. The longhouse communities also perceived that tourism in Ulu Batang Ai has very little negative effect on the environment and on their culture. The response of the longhouse communities to tourism in Ulu Batang Ai may be considered to be at the stage of ‘euphoria’ in the ‘tourist irritation index’ as proposed by Doxey (1975). It has little or no influence on the normative behaviour of the local people. The longhouse communities were pleased to see tourism development, perceived tourism positively and they welcome tourists. Tourists are generally satisfied with their visit.
The study indicated that tourism related activities could provide local communities with a source of income, and could occupy their time as in the case of the Rh. Ngumbang residents. However, tourism has failed to benefit the residents of other longhouses, for example, Rh. Ayum and Rh. Endan. On the positive side, even though the local people in Ulu Batang Ai have experienced tourism since 1987, they still perceived tourism with enthusiasm despite some communities failing to clearly gain benefits from it. Thus, it is important to examine the reasons why and how tourism worked or failed in Ulu Batang Ai. Tourist lodges were constructed adjacent to three longhouses in Ulu Batang Ai: - Rh. Endan, Rh. Ayum, and Rh. Ngumbang. The longhouse residents, with assistance from Borneo Adventure, a tour agency based in Kuching constructed the lodges adjacent to Rh. Endan and Rh. Ngumbang. Koperasi Serba Guna Ulu Batang Ai constructed a lodge adjacent to Rh. Ayum.

- Why and how longhouse tourism worked in Ulu Batang Ai

Longhouse tourism worked in Rh. Ngumbang (the most consistently visited longhouse) for the following reasons:

i. There is co-operation with Borneo Adventure, a tour agency based in Kuching, which brings in tourists regularly.

ii. There is a very strong bond between the longhouse residents and Borneo Adventure based on positive foundations of a long-standing relationship. Both parties strive for a win-win situation whereby Borneo Adventure want a strong partner and provided the longhouse residents with financial assistance.

iii. There is a strong social fabric among the longhouse residents with strong leadership from the headman and the tourism committee.

iv. The Rh. Ngumbang longhouse population (209 people) is large compared with the number of 1,000 visitors spread evenly throughout the year thus minimising any adverse impacts of visitors on the local population.

v. A pattern of slow but steady development has enabled the community to adopt realistic expectations about tourists and tourism.
Why and how longhouse tourism failed in Ulu Batang Ai

Longhouse tourism failed in Rh. Ayum and Rh. Endan for the following reasons:

i. There is no co-operation with a tour agency, which means there is no direct link to, or understanding of the tourism market.

ii. There is weak social fabric and lack of leadership among the residents of Rh. Ayum as indicated by incidents of fighting and drunkenness. Residents of Rh. Endan lost a strong and experienced leader when the late headman, Tuai Rumah Sumbu died in 1991.

iii. There are few people in either Rh. Endan or Rh. Ayum. There are only four families in Rh. Endan and the residents of Rh. Ayum are residing in the resettlement scheme and only proceed to the longhouse in Ulu Batang Ai when there are visitors.

The key reason for the failure of some longhouses to develop tourism in Ulu Batang Ai is the lack of co-operation with a tour agency that has links to the markets. In addition, the human development of the local communities is another major component required for tourism to work. Ulu Batang Ai has the product to offer, however, tourism requires the development of both infrastructure and human resources, both of which are in their infancy stages in Ulu Batang Ai. It is essential that the human resources be developed along with infrastructure development for tourism to thrive in Ulu Batang Ai.

Infrastructural development planned by the Implementing Agencies may not enhance tourism in Ulu Batang Ai if the link to tourism markets and human development in the area is not addressed. Importantly, tourism levels appear to remain below “carrying capacity” due largely to the remoteness of most longhouses, and the long-term vision of a benevolent tourism operator who, as the sole partner, resists and avoids exceeding capacity. As pressure to increase tourism grows, it should be noted that, for further development neither of these factors can be assured, or taken for granted.

7.3.2 Implication for conservation and tourism

Generally, benefits from tourism in Ulu Batang Ai at this stage are too small to make much difference to the traditional way of life of the local people. Thus, their well-being
depends on forest resources adjacent to their longhouses, which continue to provide them with most of their daily requirements. However, local people retain long-term rights and privileges to hunt, fish, and gather forest produce from the national park, and may exercise these rights if the forest areas next to their longhouses are depleted, or if these forests are converted to other forms of land use. Should this situation eventuate, it would ultimately undermine the conservation values of the park. Thus, for Batang Ai National Park to be able to continue to sustain its conservation values, it is crucial that the forest areas next to the longhouses be able to continue to provide the longhouse communities with most of their daily requirements.

The communities in all the longhouses under study have been affected in one way or another by the gazettement of Batang Ai National Park. For some, what were once their traditional hunting, fishing and gathering grounds are now a national park. Often, they view Batang Ai National Park as an obstruction to their traditional ways of life, and consider that they need to defend their rights constantly. This often results in an atmosphere of conflict between park managers and local people. Thus, it is crucial that the local communities must be able to recognise the benefits from the park if they are to support conservation of the area.

Tourism is seen as a way in which benefits could be channelled to the local people without undermining the conservation values of the park. During the time of this survey, benefits from tourism were seen to be more of a ‘bonus’ for the longhouse residents. Rh. Ngumbang, with the highest level of visitation experienced very little changes to their traditional way of life. Borneo Adventure pointed out that the maximum number of tourists to Rh. Ngumbang is 1,000 per year spread out evenly to “... provide the longhouse people with means of production ... which is compatible with their day-to-day lifestyle” (Yong and Basiuk, 1998; p.5). This arrangement provides positive effects for both tourism and conservation -- the longhouse residents are still enthusiastic about tourism and have taken initiatives to protect the forest and wildlife that attract the tourists. A key consideration has been to avoid local people’s dependency on the benefits from tourism.
Thus, for tourism to benefit both local communities and conservation, it requires the commitment of all parties -- government agencies (e.g. Park managers, Tourism Planners and Promoters), the tour operators and the local communities themselves, working together as partners to achieve a win-win situation. This requires the commitment and involvement of all parties, including all “… professionals to ensure that management is responsive and responsible in terms of the fundamental objectives for which these lands have been reserved” (Devlin and Booth, 1998 p. 113).

7.3.3 Implication for Batang Ai National Park

Local people with privileges to hunt, fish, and gather forest produce from Batang Ai National Park are far too many to be sustainable if they obtain all of their daily requirements from the park. Furthermore, if privilege holders continue to hunt, fish and gather forest produce from the park, the park will lose its natural attractions which may affect tourism and consequently the local economy and the benefits from tourism. For Batang Ai National Park to continue to maintain its conservation goals, it is crucial that the forest areas next to the longhouses be able to continue to provide the longhouses with their daily requirements so that they do not have to collect from the park. Findings from this study support management decisions to enhance the conservation values of the park through tourism, while protecting buffer areas for multiple use objectives.

Tourism can create jobs which benefit the local communities. However, job opportunities can attract more people in, or adjacent to the park, as experienced in Gunung Mulu National Park. The more people living in, or adjacent to the park, the higher will be the pressure on the natural resources which may be counter to conservation. Thus, it is most important that park management recognises the balance between conservation and tourism in order to ensure that the conservation values of the park are not compromised.
7.4 FURTHER RESEARCH OPPORTUNITIES

Further research which would extend this study should prove useful for conservation management. Critical topics include the volume of tourists that can provide benefits to local communities as well as conservation, looking at what exactly is taken from the forest to sustain the people and how tourism contributes to the decrease or increase in extraction of natural resources. Extrapolating from other areas which have longhouse tourism, such as the Skrang area, could provide key insights from what are highly visited tourism areas.

There is a need for more research into the changing roles in longhouse tourism; how the benefits from tourism are distributed among the communities, and what significant changes they make to the local socio-economy, particularly with respect to the traditional ways of life of farming, gathering and hunting. Longitudinal research incorporating a finer scale for the measure of ‘time spent’ on traditional activities is especially recommended in order to better understand the sustainability of use of natural resources from Batang Ai National Park.
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# APPENDIX 1
## KEY INFORMANTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloysius Dris (Mr.)</td>
<td>Sarawak Tourism Board</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>Christopher Kri Ubong (Mr.)</td>
<td>National Park and Wildlife Division, Forest Department.</td>
<td>Forest Department counterpart to ITTO project in Batang Ai.</td>
</tr>
<tr>
<td>Gadang ak Gajah (Mr.)</td>
<td>Ng. Delok Longhouse.</td>
<td>Ex-chairman of Ng. Delok, Fish Culture Committee.</td>
</tr>
<tr>
<td>Ganing ak Alek (Mr.)</td>
<td>Koperasi Serba Guna Ulu Batang Ai.</td>
<td>Chairman. Councillor for Batang Ai.</td>
</tr>
<tr>
<td>George Jebron (Mr.)</td>
<td>National Park and Wildlife Division, Forest Department.</td>
<td>Officer-in-Charge Batang Ai National Park in 1996.</td>
</tr>
<tr>
<td>Jonathan Dugat (Mr.)</td>
<td>Ng. Sumpa Longhouse.</td>
<td>Chairman, Tourism Committee, Ng. Sumpa. The committee represent the interests of residents of Rh. Ngumbang, Rh. Changging and Rh. Kasi</td>
</tr>
<tr>
<td>Jonathan Mawang (Mr.)</td>
<td>Hilton Longhouse Resort, Batang Ai.</td>
<td>Resident Manager.</td>
</tr>
<tr>
<td>Melvin Gumal (Dr.)</td>
<td>World Conservation Society</td>
<td>Director, Malaysia Programme. Ex-head of the Education Extension Unit of NPWD.</td>
</tr>
<tr>
<td>Michael Meredith (Mr.)</td>
<td>World Conservation Society</td>
<td>Senior Research Officer. Conducted research in Batang Ai National Park from 1990 to 1993 and wrote the management plan for BANP.</td>
</tr>
<tr>
<td>Paul Chai (Dr.)</td>
<td>International Tropical Timber Organisation (ITTO).</td>
<td>Project Leader for Sarawak Programme. Ecologist</td>
</tr>
<tr>
<td>Philip Yong (Mr.)</td>
<td>Borneo Adventure.</td>
<td>Managing Director</td>
</tr>
<tr>
<td>Ramblı Ahmad (Mr.)</td>
<td>Ministry of Tourism</td>
<td>Ecotourism Officer, MOT</td>
</tr>
<tr>
<td>Robert Basiuk (Mr.)</td>
<td>Borneo Adventure.</td>
<td>Partner. Ex-CEO Sarawak Tourism Board.</td>
</tr>
<tr>
<td>Siali Aban (Mr.)</td>
<td>National Park and Wildlife Division, Forest Department.</td>
<td>Park Warden of Batang Ai National Park in 1999 to 2000.</td>
</tr>
<tr>
<td>Sundai (Mr.)</td>
<td>International Tropical Timber Organisation.</td>
<td>Research Officer, Batang Ai National Park.</td>
</tr>
<tr>
<td>Zaidel (Mr.)</td>
<td>National Park and Wildlife Division, Forest Department.</td>
<td>Park Warden.</td>
</tr>
</tbody>
</table>
# APPENDIX 2
## NUMBER OF PEOPLE IN LONGHOUSES IN ULU BATANG AI

<table>
<thead>
<tr>
<th>Longhouses</th>
<th>Number of people</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rh. Endan, Wong Tibu, Batang Ai</td>
<td>Adult Male</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rh. Griffin, Ng. Jingin, Sungai Jungin.</td>
<td>Adult Female</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rh. Changging, Pala Taong, Sungai Delok.</td>
<td>Adults</td>
<td>19</td>
<td>6</td>
<td>25</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rh. Ngumbang, Ng. Sumpa, Sungai Delok.</td>
<td>Adults</td>
<td>62</td>
<td>20</td>
<td>88</td>
<td>209</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rh. Kasi, Ng. Jambu, Sungai Delok.</td>
<td>Adults</td>
<td>7</td>
<td>2</td>
<td>21</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rh. Rimong, Sebubut, Lubok Antu.</td>
<td>Adults</td>
<td>15</td>
<td>8</td>
<td>27</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rh. Ayum, Bertik Skim, Lubok Antu.</td>
<td>Adults</td>
<td>49</td>
<td>24</td>
<td>51</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Adult Male</strong></td>
<td><strong>69</strong></td>
<td><strong>40</strong></td>
<td><strong>86</strong></td>
<td><strong>209</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Adult Female</strong></td>
<td><strong>20</strong></td>
<td><strong>50</strong></td>
<td><strong>86</strong></td>
<td><strong>150</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Children</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>21</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>90</strong></td>
<td><strong>86</strong></td>
<td><strong>386</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Numbers of people in longhouses were based from information gathered during the community group interviews. Adults are those 18 years and above and children are those below 18 years. Bej: Number of people working in other places, away from the longhouse.
APPENDIX 3A
QUESTIONNAIRE SURVEY (ENGLISH)

LINCOLN UNIVERSITY
Te Whare Wānaka O Aoraki

BATANG AI NATIONAL PARK

A SURVEY ON TOURISM BENEFITS AND CONSERVATION

ENVIRONMENT, SOCIETY AND DESIGN DIVISION
LINCOLN UNIVERSITY
CANTERBURY
Title: Can tourism benefit both local people and conservation? A Case Study of seven Longhouse Communities in and adjacent to Batang Ai National Park, Sarawak, Malaysia.

Selamat Pagi / Kia Ora / Greetings

The following questionnaire seeks information about tourism benefits and conservation in Batang Ai National Park. The survey in itself is completely independent of any organization, although the results of this survey may well help in Park Management and Tourism Management planning. Primarily, the results will be used in the preparation of a thesis at Lincoln University for the degree of Masters in Parks, Recreation and Tourism Management.

Your participation in this survey is on a voluntary basis. You have the right not to answer any question and also to withdraw at any given point of time. The completed questionnaire will be stored in a locked office and will be destroyed at the end of the research. The data derived from the questionnaire will be stored in a password-protected computer and disk. It will not contain any information that could directly identify the information to you personally. The questionnaire will be viewed by the student researcher and may be viewed by the student's supervisors, Dr. Patrick Devlin and Dr. David Simmons.

This survey has been reviewed for ethical compliance by Lincoln University Ethics Committee to ensure the maximum protection for the participants and has met those requirements. Should you have any queries, please do not hesitate to contact the principal researcher or the student's supervisors.

Please sign the consent form and attempt to answer each question. Most questions require a response to indicate the level of agreement in the box provided, although some may also ask for your comments. The consent form will be kept separately from the questionnaire to ensure that all responses be anonymous and confidential.

Your participation is very much appreciated.

Thank you

Oswald Braken Tisen
POST-GRADUATE STUDENT
ENVIRONMENT, SOCIETY AND DESIGN DIVISION
LINCOLN UNIVERSITY
CANTERBURY
NEW ZEALAND

SUPERVISORS:
Dr. PATRICK DEVLIN
E-MAIL: devlin@lincoln.ac.nz

Dr. DAVID SIMMONS
E-MAIL: dsimmons@lincoln.ac.nz

I have read and understood my rights as a participant in this project entitle 'Can tourism benefit both local people and conservation? A case study of seven Longhouse Communities in and adjacent to Batang Ai National Park, Sarawak', and consent to take part in this study.

Signature: ______________________ Date: ______________________
Questionnaire #: ______________________
Place: ______________________ Time: ______________________ Date: ______________________
SECTION A

1. Please specify your age. ________ yrs.

2. Are you: Male: ☐ Female: ☐

3. Where were you born? ____________________________

4. How long have you lived in (name of longhouse)? _______ years

5. What is the highest level you have attained in your formal education?

6. What is your main occupation? ____________________

7. Your income per month is?

Rm ____________________________

8. How much time do you spent on work such as farming, harvesting forest produce, hunting and fishing per week?

<table>
<thead>
<tr>
<th></th>
<th>Farming</th>
<th>Harvesting forest produce</th>
<th>Hunting</th>
<th>Fishing</th>
<th>Other work (Please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one day per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 2 days per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 to 4 days per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 to 6 days per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Everyday</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION B


10. How often do you come in contact with tourists\textsuperscript{33}? 

\begin{itemize}
\item [] daily.
\item [] several times a week.
\item [] a few times a month.
\item [] rarely.
\item [] never (go to Section C)
\end{itemize}

11. In which of the following situations would you expect to meet tourists?

\begin{itemize}
\item [] at work
\item [] at your longhouse
\item [] at the ‘jelatong’ (Dam site)
\item [] at Lubok Antu
\item [] at Hilton Longhouse Resort
\item [] at your farm
\item [] at Batang Ai National Park (including Park HQ)
\item [] on the forest trails next to your longhouse
\item [] Others (Please specify) ____________________________ 
\end{itemize}

12. Which months would you expect to meet tourists in this/your longhouse?

\begin{itemize}
\item [] January, \checkmark February, \checkmark March, \checkmark April, \checkmark May, \checkmark June, \checkmark July, \checkmark August, \\
\item [] September, \checkmark October, \checkmark November, \checkmark December
\end{itemize}

13. How much is spent by tour operators and tourists in your/this longhouse?

Rm ______________ per month

14. How much is spent for purchasing of the following goods/services?

\begin{tabular}{|c|c|c|c|c|c|c|}
\hline
Goods and Services & Transport & Food/Drink & Guide & Souvenirs & Performances & Others \\
\hline
 & Boat Hire & Fuel & Wages & & & \\
Rm & & & & & & \\
\hline
\end{tabular}

\textsuperscript{33} Explain that tourists in this context are people from outside Lubok Antu District who come to Batang Ai not for work related activities but for leisure.
15. Would you like to see □ more □ same, □ less, or □ no tourist come to this area?

16. Would you like to have □ more, □ same, □ less or □ no contact with tourists?

17. Why would you like to have (more /same/less/no) contact with tourists?

18. Have you ever had work related to tourism?
   □ No.
   □ Yes.

19. If yes, what type of work? ____________________________

20. Is it □ full-time or □ part-time work?

21. Is the job □ seasonal or □ permanent?

22. If seasonal, please specify which month(s)?
   □ January, □ February, □ March, □ April, □ May, □ June, □ July, □ August,
   □ September, □ October, □ November, □ December

23. Do you receive money for this work?
   □ No.
   □ Yes.

24. If yes, how much do you receive for this work?
   □ > Rm 100 per month.
   □ Rm 101 – Rm 500 per month.
   □ Rm 501 – Rm 1,000 per month.
   □ Rm 1,001 – Rm 1,500 per month.
   □ Rm 1,501 – Rm 2,000 per month.
   □ < Rm 2,001 per month.
SECTION C

25. Do you think that tourism will □ increase, □ decrease or □ stay the same in your longhouse in the next 12 months?

26. Why do you think that tourism will (increase/ decrease/ stay the same) in your longhouse in the next 12 months?

27. Do you think you, personally, will □ benefit, □ suffer, □ stay the same financially as a result of (increase/decrease/stay the same) tourism in the next 12 months?

28. What do you like most about tourism?

29. What do you dislike most about tourism?

30. Now I am going to read you a number of statements about tourism and I want you to tell me how strongly you agree or disagree with each one. Please select from strongly agree, agree, neither agree nor disagree, disagree, strongly disagree or don’t know

<table>
<thead>
<tr>
<th>Statement</th>
<th>5 Strongly Disagree</th>
<th>4 Disagree</th>
<th>3 Neither/Nor</th>
<th>2 Agree</th>
<th>1 Strongly Agree</th>
<th>0 Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism has created jobs in your/this area/longhouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The benefits of tourism get distributed widely through your/this longhouse community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only a few people in your/this longhouse benefit from tourism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Strongly Neither/ Strongly Don't Disagree</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of the benefit from tourism goes to tour operators (e.g. based in Kuching) and very little benefit goes to the longhouse communities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tourism is good for Sarawak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism brings about development to Batang Ai District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism is good for your/this longhouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism benefits you and your family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism has increased the cost of living in your/this area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The development of tourist facilities and attractions is a threat to your/this local environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism makes you feel like a stranger in your/this area/longhouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your/this area/longhouse should be promoted to attract many more tourists</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of the tourists coming to your/this area/longhouse are from overseas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You are spending more time on tourism related work than farming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourists come to your/this longhouse to see your/local culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourists come to your/this longhouse because of Batang Ai National Park</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
31. Now I am going to read you a number of statements about conservation and Batang Ai National Park (BANP) and I want you to tell me how strongly you agree or disagree with each one. Please select from strongly agree, agree, neither agree nor disagree, disagree, strongly disagree or don’t know.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANP provides opportunity for employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANP ensures clean water and good environment for the area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANP benefits you and your family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANP benefits Sarawak as a whole more than it benefit the local people</td>
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<tr>
<td>BANP benefits tourists more than it benefits the local people</td>
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<tr>
<td>Tourists come to this area because of BANP</td>
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<tr>
<td>BANP is important for the protection of orang utan and other wildlife</td>
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<tr>
<td>It is important to protect the forest area next to your/this longhouse in order to continue to attract tourist</td>
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<tr>
<td>It is important to protect wildlife for our children</td>
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<tr>
<td>There are poaching in BANP</td>
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<tr>
<td>People who poach in BANP should be punished</td>
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<tr>
<td>Local people should not be allowed to hunt near tourist facilities such as jungle trail in BANP</td>
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<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither/Nor</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Don't know</td>
<td></td>
</tr>
</tbody>
</table>

Local people are consulted by the Forest Department with respect to development in BANP

People with privileges of traditional use of BANP should be allowed to hunt, fish and collect jungle produce as much as they want for food.

People from outside this region should not be allowed to hunt, fish and collect jungle produce from BANP

More facilities for tourists should be provided at BANP

32. Any other comments.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Thank you for your cooperation in completing this questionnaire.

Oswald Braken Tisen.

POST GRADUATE STUDENT
ENVIRONMENT, SOCIETY AND DESIGN DIVISION
LINCOLN UNIVERSITY.
APPENDIX 3B
QUESTIONNAIRE SURVEY (IBAN)

LINCOLN UNIVERSITY
Te Whare Wānaka O Aoraki

BATANG AI NATIONAL PARK

PANSIK PASAL PENGUNTUNG ARI PENGAWA DAGANG TEMUAI ENGGAU PENGAWA KE BEGALAU KA KAMPUNG ENGGAU JELU SIGA

ENVIRONMENT, SOCIETY AND DESIGN DIVISION
LINCOLN UNIVERSITY
CANTERBURY
Pekara: Ulih ka enda dagang temuai nguntungka orang empu menua enggau begalau ka utai asal (conservation)? Pansik ba tujuh buah rumahpanjai ke berimbai enggau National Park Batang Ai, Sarawak, Malaysia.

Selamat Pagi,


Kita tau enda iboh nyaut tanya ke asai ba kita kelalu mar lalu nadai besangkut-paut enggau pendiau kita ba menua kita ditu. Tanya-saut ke udah tembu tu ila disimpan aku ba opis lalu ka dibuai enti pansik aku tu ila udah tembu. Penerang taula data ke diambi ari ari tanya-saut taula pansik tu ila disimpan aku ba komputar. Nama tiap-tiap iko kita ke udah meri penerang taula saut ba pansik tu ila enda dipadah. Tanya-saut tu ila deka diperesa orang ke ngaga pansik tu empu (aku empu) enggau bala pengajar (professor) aku, Dr. Patrick Devlin enggau Dr. David Simmons.

Komiti 'ethics' ari Universiti Lincoln di New Zealand udah netapka pansik tu enda medis sapa-sapa ti bisi meri penerang ba tanya-saut tu. Enti bisi utai enda terang ba ati kita, kita tau nanya aku empu.


Kerejasama bala kita amat beguna endar ba ari.

Terima kasih.

Oswald Braken Tisen,
POST-GRADUATE STUDENT,
ENVIRONMENT, SOCIETY AND DESIGN DIVISION,
LINCOLN UNIVERSITY,
CANTERBURY,
NEW ZEALAND.

SUPERVISORS:
Dr. PATRICK DEVLIN
E-MAIL: devlin@lincoln.ac.nz

E-MAIL: tisen@lincoln.ac.nz
TEL.: (64)(03) 3252-811
FAX: (64)(03) 3253-857

Dr. DAVID SIMMONS
E-MAIL: dsimmons@lincoln.ac.nz

Aku udah macba lalu nemu kuasa aku ba tanya pansik bertajuk ‘Ulih ka enda dagang temuai nguntungka orang empu menua enggau begalau ka utai asal (conservation)? Pansik ba tujuh buah rumahpanjai ke berimbai enggau National Park Batang Ai, Sarawak’, lalu setuju nitih ka pansik tu.

Tandatangan/Chap jari: _______________ Ari bualan: _______________
Tanya-saut #: __________

Tempat: __________________ Jam: __________ Ari bulan: __________

BAGI A

1. Umur nuan. __________ thn.

2. Nuan: Lelaki □ Indu: □

3. Dini alai nuan ada? ____________________________

4. Berapa lama udah nuan diau ba rumahpanjai tu? __________ taun

5. Ni naka peninggi pelajar sekula nuan?

6. Nama batang pengawa nuan? __________________

7. Duit ulih nuan sebulan?
   RM______________________________

8. Ni pengelama nuan gawa ba umai, begiga ka utai sebelah babas, ngasu-beburu enggau berikan dalam seminggu-seminggu?

<table>
<thead>
<tr>
<th>Enda/nadai sekali</th>
<th>Bumai</th>
<th>Begiga ka utai sebelah babas</th>
<th>Ngasubeburu</th>
<th>Berikan</th>
<th>Pengawa bukai (sebut ditu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>kurang ari satu ari dalam seminggu</td>
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<td>1 ke 2 ari dalam seminggu</td>
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<td>3 ke 4 ari dalam seminggu</td>
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<td>5 ke 6 ari dalam seminggu</td>
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<td>Tiap-tiap ari</td>
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</tbody>
</table>
9. Ba penemu nuan sapar orang ke dikumbai temuai? __________________________

10. Ni penyuh nuan betemu enggau temuai34 ?

□ tiap ari
□ dua-tiga kali seminggu
□ dua-tiga kali sebulan
□ jarang endar
□ enda kala sekali (terus ke BAGI C)

11. Dini endor nuan tau/ulih betemu enggau bala temuai?

□ ba alai nuan gawa
□ ba rumahpanjai nuan
□ ba jelatong (ba tekat)
□ ba pasar Lubok Antu
□ ba Hotel Hilton
□ ba umai nuan
□ ba National Park Batang Ai (nyengkaum ba Opis National Park)
□ sebelah jalai dalam babas semak rumah
□ ba tempat bukai (sebut) __________________

1. Ba jangka nuan ba bulan berapa nisi bala temuai nisi datai ke rumahpanjai kita?

□ Bulan Satu, □ Bulan Dua, □ Bulan Tiga, □ Bulan Empat, □ Bulan Lima,
□ Bulan Enam, □ Bulan Tujuh, □ Bulan Lapan, □ Bulan Sembilan,
□ Bulan Sepuluh, □ Bulan Sebelas, □ Bulan Duabelas

2. Kira-kira berapa duit dibelanja bala temuai ba rumahpanjai kita?

RM ______________ per month/sebulan

34 Explain that ‘temuai’ in this context are people from outside Lubok Antu District who comes to Batang Ai not for work related activities but for leisure.
3. Berapa penyampau duit dikenma sida temuai tu bebeli ka utai kita tauka bebayar ka main asal ke dipandang kita ka sida iya?

<table>
<thead>
<tr>
<th>Barang dijual enggau main asal ke didandang</th>
<th>Perau perau</th>
<th>Bayar minyak</th>
<th>Gaji/ Upah</th>
<th>Pemak ait/ Aiirup</th>
<th>Main asal ke dipandang</th>
<th>Barang ka dijual</th>
<th>Utai bukai</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM</td>
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</tbody>
</table>

15. Ka nuan meda □ maioh agi □ sama ngemaioh ka diatu ⊗ kurang ari kadiatu tauka ⊗ nadai siko temuai datai ka menua kita kitu?

16. Setuju nuan enti □ maioh agi, □ mimit agi tauka □ nadai siko temuai betemu enggau nuan?

17. Nama kebuah nuan ka agi/ sama baka kadiatu/jarang agi/nadai sekali) betemu enggau temuai?

18. Bisi kala ngereja pengawa ke besangkut-paut enggau dagang temuai nuan ngelamatu?
   □ Enda kala.
   □ Kala.

19. Enti kala, nama bansa pengawa nya? __________________________

20. Pengawa tu □ sepemanjai ari tauka □ sementara ?

21. Kati pengawa tu □ nitih ka musin tauka □ tetap?

22. Enti nitih ka musin, bulan berapa?
   □ Bulan Satu, □ Bulan Dua, □ Bulan Tiga, □ Bulan Empat, □ Bulan Lima,
   □ Bulan Enam, □ Bulan Tujuh, □ Bulan Lapan, □ Bulan Sembilan,
   □ Bulan Sepuluh, □ Bulan Sebelas, □ Bulan Duabelas

23. Bisi gaji tauka upah nuan kereja tu?
   □ Nadai.
   □ Bisi.
24. Enti bisi, berapa ringgit diterima nuan?

☐ > RM100 sebulan.
☐ RM 101 – RM 500 sebulan.
☐ RM 501 – RM 1,000 sebulan.
☐ RM 1,001 – RM 1,500 sebulan.
☐ RM 1,501 – RM 2,000 sebulan.
☐< RM 2,001 sebulan.

BAGI C

25. Ba runding nuan pengawa dagang temuai tu ka □nambah, □makin kurang tauka
□enda berubah baka kadiatu ba rumahpanjai nuan dalam kandang 12 bulan ke
dekata datai tu?

26. Nama kebuah nuan madah ka pengawa dagang temuai tu deka nambah/makin
kurang tauka enda berubah ba rumahpanjai nuan dalam kandang 12 bulan ke deka
datai tu?

27. Ba runding nuan bisa ka enda kini pengawa dagang temuai tu □nguntung,
□ngerugi, □tau ka nadai ngubah pengidup nuan arisegi pemisi belanja asil ari
pengawa dagang temuai tu ke bisa nambah/kurang/enda berubah ba kandang 12
bulan ke ka datai tu?

28. Nama utai ke ngerindu ka nuan endar ba pengawa dagang temuai tu?

29. Nama utai ke dikenggai ka nuan endar ba pengawa dagang temuai tu?

30. Iatu aku ka macha ka nuan lumur ‘statement’ ba pengawa dagang temuai lalu aku
ngasuh nuan madah ka aku ni naka nuan setuju enggau siti-siti tu. Pilih ari ‘setuju
nemu’.

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<table>
<thead>
<tr>
<th>Dagang temuai ngada ka pengawa ba rumahpanjai nuan/tu</th>
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<tbody>
<tr>
<td>Enda setuju</td>
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<table>
<thead>
<tr>
<th>Penguntung ari pengawa dagang temuai tu dibagi sama rata ba bala di rumahpanjai tu</th>
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<tbody>
<tr>
<td>Enda setuju</td>
</tr>
<tr>
<td>Semina sekeda bala kami ditu aja ke bulih penguntung ari pengawa dagang temuai ba rumahpanjai tu</td>
</tr>
<tr>
<td>Maioh agi ari penguntung ba pengawa/dagang temuai tu pulai ngagai ejen ke mai bala temuai baka ari Kuching lalu mimit endar penguntung tu pulai ngagai bala kami ke empu rumahpanjai</td>
</tr>
<tr>
<td>Dagang temuai tu manah endar ke nengeri Sarawak</td>
</tr>
<tr>
<td>Dagang temuai tu mai pemansang ke Pelilih Menua Batang Ai</td>
</tr>
<tr>
<td>Dagang temuai tu manah ka rumahpanjai tu</td>
</tr>
<tr>
<td>Dagang temuai nguntung ka nuan engau kita sebilik</td>
</tr>
<tr>
<td>Dagang temuai udah nambah ka penatai pemisi ba menua tu</td>
</tr>
<tr>
<td>Pemansang dagang temuai tu nyadi penanggul pengawa bukai ba menua kita tu</td>
</tr>
<tr>
<td>Pengawa dagang temuai tu ngasuh nuan ngasai ka diri baka anak kampar tauka orang bukai ba rumah diri empu</td>
</tr>
<tr>
<td>Rumah panjai nuan/kita tu patut digaga manah agi kena narit bala temuai datai kitu</td>
</tr>
<tr>
<td>Tebal agi bala temuai ke datai kitu datai ari menua tasik</td>
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<td>Enda</td>
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Nuan rindang agi ba pengawa dagang temuai ari ke gawa ba umai diri empu

Bala temuai ke datai ngagai rumah kita ka meda main asal enggau chara pengidup kita ditu

Bala temuai datai ngagai rumah kita laban nisi National Park Batang Ai


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<td>Tengahari</td>
<td>Setuju</td>
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National Park Batang Ai meri peluang kereja

National Park Batang Ai ulih meri ai ke chiru enggau rampa menua ke manah

National Park Batang Ai meri penguntung ka nuan enggau kita sebilik

National Park Batang Ai meri penguntung maioh agi ka nengeri Sarawak ari ka diberi ka rayat ditu empu

National Park Batang Ai meri maioh agi penguntung ka bala temuai dibandingka penguntung ke ulih bala ditu empu
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|   | setuju | Tengahri | Setuju | Setuju | Enda
|   | endar |   |   |   |   | nemu |
| Temuai datai ke tempat tu laban
ditu bisi National Park Batang Ai |   |   |   |   |   |   |
| National Park Batang Ai beguna
bendar kena nyaga mayas enggau
bala jelu siga ke bukai |   |   |   |   |   |   |
| Amat beguna bendar nyaga
kampung ke semak rumah kita tu
ngambika ulih terus narit bala
temuai datai kita |   |   |   |   |   |   |
| Bisi orang ngasu belalai dalam
National Park Batang Ai tu |   |   |   |   |   |   |
| Orang ke ngasu dalam National
Park tu patut diukum |   |   |   |   |   |   |
| Orang ditu patut ditagang ngasu ba
endor ke besemak enggau palan
temuai baka sebelah nisi
jalai’ jungle trail |   |   |   |   |   |   |
| Opis Kampung udah berunding
tauka betanya enggau bala orang
ke empu menua ditu dalam pekara
ke besangkut-paut enggau
National Park Batang Ai |   |   |   |   |   |   |
| Orang ke bisi diberi kuasa ngasu-
beburu, berikan enggau begiga ka
utai sebelah babas enda patut
ditagang ngulih ka utai tu seneka
ati sida |   |   |   |   |   |   |
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<td>Enda setuju</td>
<td>Tengahari</td>
<td>Setuju</td>
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<td>Enda nemu</td>
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</table>

Orang ke datai ari luar tempat tu patut ditagang ngasu, berikan enggau begiga ka utai sebelah babas dalam kandang National Park tu

Perengka tauka utai ke ulih diguna bala temuai patut maioh agi diadaka ba National Park Batang Ai tu

32. Bisi komen bukai.

Terima kasih ka kerejasama bala kita ke utai ngisi tauka nembuka tanya-saut tu tadi.

Oswald Braken Tisen.

POST GRADUATE STUDENT
ENVIRONMENT, SOCIETY AND DESIGN DIVISION
LINCOLN UNIVERSITY.
APPENDIX 4A
SEMI-STRUCTURED LONGHOUSE INTERVIEW CHECKLIST (ENGLISH)

A] Demographic data

Date:....................Time:....................Location:..........................................

Name of Headperson:....................Age:...............Sex:..........

Number of Participants...........(Male:.......Female:........)

1. When was this longhouse built?

2. How many families were there when it was first built?

3. How many families in this longhouse now?

4. Why are there more/fewer families living in your longhouse now?

5. Were there more or fewer people living in Ulu Ai, Jingin and Delok now compared with other times and why has the change occurred?
   
   i. before the dam was constructed,
   
   ii. after the dam was constructed but before Batang Ai National Park (BANP) was gazetted,
   
   iii. after the establishment of BANP?

B] Socio-economic Status

6. Condition of Longhouse (Observation by researcher).

   i. Walls:.....................
   
   ii. Roof:.....................
   
   iii. Floor:.....................
   
   iv. Lighting:..................
   
   v. Water supply:............

7. Are you spending more or less time farming, hunting, fishing and gathering forest produce now than...and why?

   i. before the dam was constructed,
   
   ii. after the dam was constructed but before BANP was gazetted,
   
   iii. after the establishment of BANP?
8. Has it been easier or harder to earn a living (gathering food or buying food from cash earned) now than...and why?
   i. before the dam was constructed,
   ii. after the dam was constructed and before BANP was gazetted,
   iii. after the establishment of BANP?

9. Is it easier or harder to earn cash (money) now than...and why?
   i. before the dam was constructed,
   ii. after the dam was constructed and before BANP was gazetted,
   iii. after the establishment of BANP?

10. Who are farming/hunting/fishing and gathering forest produce from this/your longhouse?

11. When/ Where are you farming/hunting/fishing and gathering forest produce? (Resource Mapping required)

12. What (How successful) are you in farming/hunting/fishing and gathering forest produce? (What species of wildlife hunted and why?)

13. How (What methods) are you farming/hunting/fishing and gathering forest produce?

C] Tourism Product

14. Who comes to your longhouse?

15. How often do you see tourists in your longhouse?

16. Why do you think tourists come to your longhouse?

17. What do tourists do at your longhouse?

18. Where do they visit in your longhouse/area?

19. What do you think about tourists? (Good/Bad/No problem)

20. Do tourists buy anything (Handicraft/Food/etc) from your longhouse?

21. Do tourists pay you for any service (guiding/culture shows/photo)?

22. What types of skills are required to serve tourists? Please list.

23. How does your longhouse benefit from tourist?
24. Should tourists pay for entering your longhouse, why or why not?

25. How much money does your longhouse receive from tourism per year? (Please include money received as wages, purchases of goods and services).

26. What per cent of your income is spent within the longhouse and what per cent is spent outside your longhouse?

27. Does the Hilton Longhouse Resort provide more job opportunities for local people? How?

28. Who benefits from the Hilton Longhouse Resort? (local people in general, a few local people only, people from outside the area). How?

**D] Tourism Impacts**

29. Do you want to see more or fewer tourists visiting your longhouse?

30. Does tourism in your longhouse negatively affect your culture or way of life?

31. Are you happy to see tourists in your longhouse all day long or do you prefer for tourists to visit only during certain times?

32. Do you experience any shortage of labour during the tourist season?

33. What are the advantages and disadvantages of having tourists in your longhouse?

34. What do you see as the future advantages and disadvantages that tourism might bring to your longhouse?

35. What do you think are possible solutions for these problems (disadvantages)?

**E] Batang Ai and Conservation**

36. What do you know about BANP?

37. Does BANP provide benefits to your longhouse and how?

38. Is BANP important for tourism, why or why not?
APPENDIX 4B
SEMI-STRUCTURED LONGHOUSE INTERVIEW CHECKLIST (IBAN)

A] Demographic data

Ari bulan: ................... Jam: ..................... Tempat: ......................................
Nama Tuai Bilik/Tuai Rumah: .....................
Umur: ................... Lelaki/Indu: ...............

Penyampau sida diinterview: .......(Lelaki: ........... Indu: ...............)

1. Kemaya rumah panjai kita dientak ka/digaga?
2. Berapa iti bilik maya rumah tu baru tembu suba?
3. Berapa iti bilik diatu?
4. Nama kebuah penyampau bilik diatu nyau nambah/kurang?
5. Kati baka jam kediatu orang ke diau ba Ulu Ai, Jengin enggau Delok nisi nambah
tauka makin kurang ari maya:
   i. sebedau tekat digaga,
   ii. selepas tekat digaga tang sebedau National Park ditumbuhka,
   iii. Selepas National Park ditumbuhka?

B] Gaya pendiau enggau penatai pemisi

6. Gaya Rumahpanjai (nitih ka gaya peda orang ke ngaga pansik tu)
   i. Dinding: .........................
   ii. Atap: .........................
   iii. Geladak: .....................
   iv. Api (kelita/letrik): .........
   v. Ai paip: .....................

7. Kati nuan diatu bulih agi bumai, ngasu, berikan enggau begiga ka utai babas
dibandingka enggau............. lalu nama kebuah?
   i. sebedau tekat digaga,
   ii. selepas tekat digaga tang sebedau National Park tu ditumbuhka,
   iii. selepas National Park tu ditumbuhka?