



# Study on Community Development

## In the Area Around Betung Kerihun National Park (BKNP)



Malaysia



ITTO PD 617/11 (F) Rev.4

Promoting Biodiversity Conservation in Betung Kerihun National Park (BKNP) as a Transboundary Ecosystem between Indonesia and state of Sarawak, Malaysia (Phase III)





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**Agus Irianto**  
**Retno Suratri**

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National Park (BKNP)**

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# Preface

Betung Kerihun National Park (BKNP) is the largest conservation area in West Kalimantan with an area of 800,000 ha. BKNP direct border with Sarawak Malaysia, and became Cross Conservation Area along with Lanjak Entimau Wild Life Sanctuary (Lews) and Batang Ai National Park (BANP) in Sarawak, Malaysia. BKNP also directly adjacent to the two provinces on the island of Kalimantan, namely province of East Kalimantan and Central Kalimantan. Community empowerment Betung Kerihun National Park is one of the important activities to support the development of border ecosystem management (Transboundary ecosystem). Community empowerment is a process of strengthening the community by providing motivation and encouragement, so that they can explore their own potential and the courage to act to strengthen the quality of life.

The success of community empowerment can be measured by an increase in the welfare of society and change the mindset of the society. If the level of people's dependence on the national park area decreases due to the activities of community empowerment, then surely the level of threat to the conservation areas will be reduced. Community empowerment around BKNP through the development of non-timber forest products and ecotourism, to improve the economy of communities around the forest becomes a priority.

To support this, with the support of ITTO Project PD 617/11 Rev.4 (I) "Promoting

Biodiversity Conservation in Betung Kerihun National Park (BKNP) as the Trans-boundary Ecosystem between Indonesia and State of Sarawak Malaysia (Phase III)", the Executing Agency is the Balai Besar BKNP has conducted studies on community empowerment around the national park which aims to develop a sustainable use the resources of the BKNP through the development of green agriculture (eco-farming) and the utilization of non-timber forest products in some selected areas.

We express our gratitude and appreciation to the team of consultants, Retno Suratri and Mr. Agus Irianto who have worked hard in preparing this report, as well as Mr. Arief Machmud, Director of BKNP and his team (Mr Muhamad Wahyudi, Andi Khadafi and Ahmad Zaini). We also would like to express our sincere thank to the ITTO project PD 617/11 Advisor Dr. Hiras Sidabutar for his guidance and project management team ITTO PD 617/11 (Lelly Ekasari and Merdiani Aghnia). Hopefully the important information in this book can be disseminated to stakeholders in forestry as an effort to develop community empowerment program in the border areas in West Kalimantan.

Jakarta, March 2015



Yani Septiani

Project Coordinator of ITTO PD 617/11



# Table of Contents

<b>Preface</b> .....	<b>iii</b>	<b>Chapter 3 Results of Analysis and Recommendations</b> .....	<b>19</b>
<b>Table of Contents</b> .....	<b>v</b>	3.1 The Steps That Need to Be Taken .....	21
<b>Table of Figures</b> .....	<b>vii</b>	3.2 Lesson Learned.....	25
<b>Abbreviation</b> .....	<b>ix</b>	3.3 Recommended Non Forest Timber Product .....	27
<b>Chapter 1 Introduction</b> .....	<b>1</b>	3.4 Agriculture and Animal Husbandry ....	30
1.1 Objectives .....	3	3.5 Development of Ecotourism.....	31
1.2 Metodology .....	3	3.6 Recommendations of Locations for Community Development Project.....	33
1.3 The Principles of Community Development in The Conservation Area .....	3	3.7 Monitoring and Evaluation .....	35
<b>Chapter 2 Presentation of Data Collected</b> .....	<b>5</b>	<b>Chapter 4 Enabling Condition</b> .....	<b>39</b>
2.1 Problem Faced by Bentung Kerihun NP Related to NFTP .....	7	4.1 Policies That Need to be Taken in The Management of the National Park Betung Kerihun.....	41
2.2 Natural Resources Utilization by Local Community .....	7	4.2 Items Proposed by the Community ....	42
2.3 Community Development Programs Implemented by The Park .....	8	4.3 Synergy With Other Institutions.....	44
2.4 Observation on The Field .....	9	<b>References</b> .....	<b>47</b>



# Table of Figures

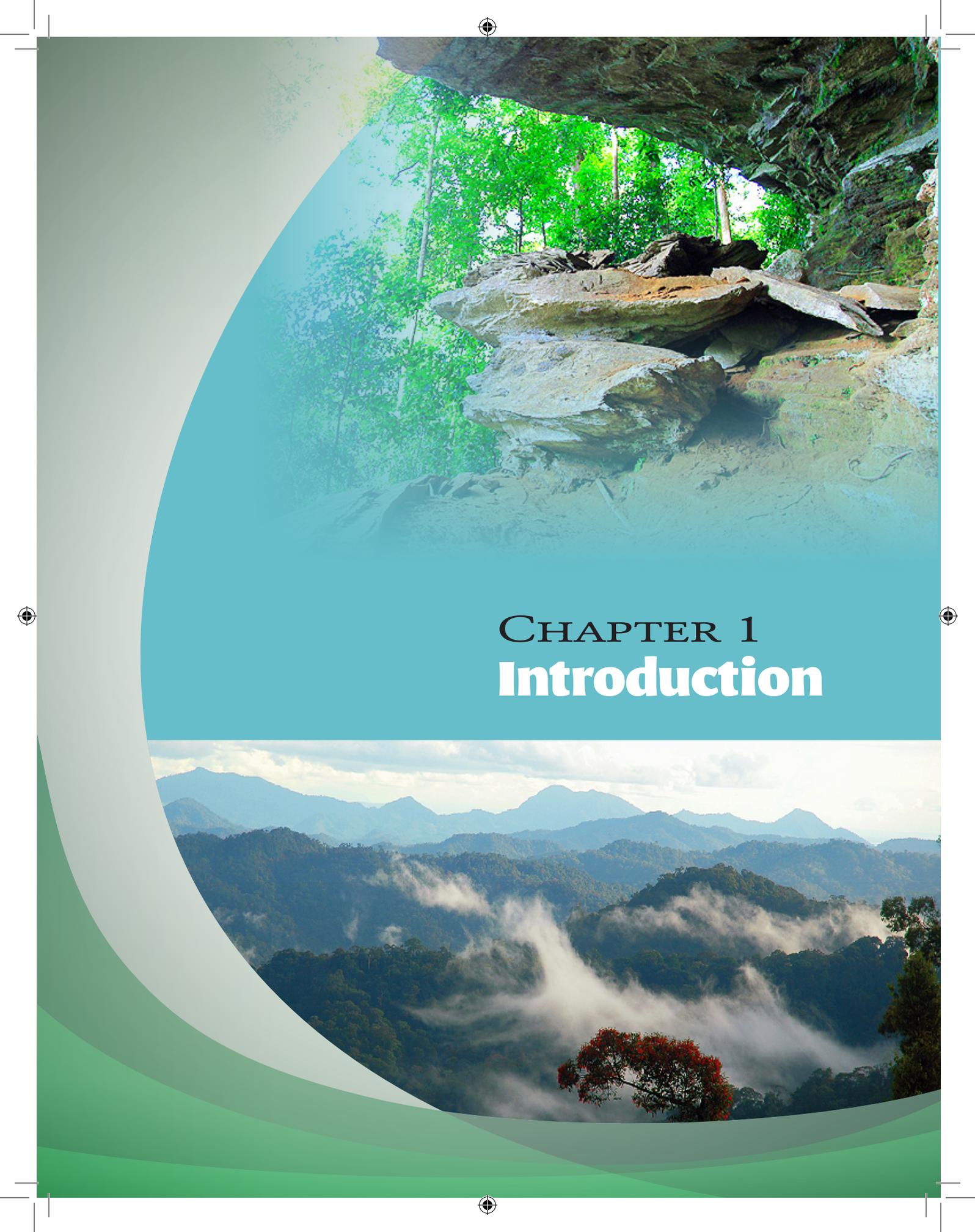
Figure 1. Chicken's Cage at Sadap Sub-Village .....	10	Figure 4. Cattles in Embaloh Hulu.....	13
Figure 2. Location ancestral shrine used by the Iban community in Sadap to execute Gawai ritual. Pinch of soil is taken from the site to be planted in the field at the new location for a better harvest .....	11	Figure 5. Red rice, black rice, and Seluwang rice produced.....	14
Figure 3. An old lady is weaving cap in longhouseof Sadap sub village and woven fabrics .....	13	Figure 6. Seladang fish in Putussibau market.....	15
		Figure 7. Vegetables sold in Labian Iraang village.....	16
		Figure 8. Refined product in Putussibau market (fish cracker and honey)..	16
		Figure 9. Example of ant sugar .....	23



# Abbreviation

<b>BKNP</b>	: Betung Kerihun National park	<b>CV</b>	: Limited company
<b>ITTO</b>	: International Tropical Timber Organization	<b>KKHBL</b>	: Directorate Forest Conservation
<b>PD</b>	: Project Document	<b>PHKA</b>	: Directorate General of Forest Protection and Nature Conservation
<b>LEWS</b>	: Lanjak Entimau Wild Life Sanctuary	<b>CITES</b>	: Convention on International Trade in Endangered Species
<b>BANP</b>	: Batang Ai National Park	<b>FORDA</b>	: Forest Research Development Agency
<b>NP</b>	: National Park	<b>INBAR</b>	: International Network for Bamboo and Rattan
<b>NTFP</b>	: Non-Timber Forest product	<b>MoU</b>	: Memorandum of Understanding
<b>NGOs</b>	: Non Government Organization	<b>RLPS</b>	: Directorate General of Land Rehabilitation and Social Forestry (RLPS)
<b>GIZ</b>	: Deutsche Gesellschaft für Internationale Zusammenarbeit, GmbH: (German: German Society for International Cooperation, Ltd.)	<b>KOMPAKH</b>	: The Community Tourism of Kapuas Hulu
<b>Kfw</b>	: Kreditanstalt für Wiederaufbau; a German government-owned development bank	<b>HPH</b>	: Forest Concession
<b>IPB</b>	: Bogor Agriculture Institute	<b>UK</b>	: United Kingdom
<b>KKSB</b>	: Sangkean Baro Conservation Group (KKSB)	<b>RBM</b>	: Resort based management
<b>FGD</b>	: Focus Group Discussion	<b>SKMAD-KH</b>	: Secretariat of Public Communications of Dayak Kapuas Hulu
		<b>FMU</b>	: Forest Management Unit





**CHAPTER 1**  
**Introduction**



## 1.1 Objectives

The goal of the study of community development in the surrounding area of the National Park Betung Kerihun (BKNP) is to develop a sustainable use of resources through the development of green agriculture BKNP (eco-farming) and the utilization of non-timber forest products in selected areas. Desired output of this study is a technical report containing information on species of non-timber forest products available based on the existing potential, experience and recommendations of the local community, as well as the markets of non-timber forest products.

The consultant(s) shall undertake the following tasks:

1. To review existing information on the potential of NTFPs, within and around BKNP
2. To hold consultations with selected communities on current livelihoods, experience in the
3. utilization of NTFPs and preferred species for development in view of improving livelihood
4. To identify NTFP species for development based on results of above activities (i and ii)
5. To develop an action plan for development of identified NTFP species covering sites, activities and associated budget taking available project's resources into account.
6. To develop a monitoring and evaluation plan for the implementation of the action plan
7. To present findings of the activity to a technical meeting that is arranged by the project
8. To present technical report of the implementation of activities

## 1.2 Metodology

Methodologies used in this activity are:

1. Conducting interviews and discussions with stakeholders, including the national park

officials, local government authorities dealing with agriculture, fisheries, forestry, tourism, Planning; including local communities such as Dayak Iban and Dayak Taman community, elders and other community members who live in long houses, NGOs and others that are considered important.

2. Conduct observations of community development activities that have been carried out previously, either by the BKNP, foreign aid agency partner (GIZ), NGOs (WWF) and daily activities of the local people such as farming, livestock breeding, and others.

The consultant team has carried outfield visiton 7 to 10 August 2014. The team made visits to two (2) houses; Dayak Taman long house in Suwai and Dayak Iban long house in Sadap Sub Village. The next visit was carried out on 3 to 7 September 2014. This visit took one Widya Iswara from Ministry of Forestry, Ir.Waldemar Hasiholan, MSi, who earlier in his career served in the Betung Kerihun and currently he trains some training related to collaborative management between local community and protected area authority and community patrol or community-based forest protection. Some of the activities examined include raising pigs and vegetables farming in Labian Ira'ang village, fields clearing in Sadap Sub Village.

## 1.3 The Principles of Community Development in The Conservation Area

The goal of community empowerment is not only to reduce the community's dependence on natural resources in the conservation area which in turn reduces the threat and disruption to the conservation area, but also to:

1. Improve the welfare of the community so that their optimal needs of clothing, food and shelter are met

2. Assist the local community to understand and be able to document the socioeconomic and cultural conditions of their own, for example, the forgotten customary rules
3. Assist the local community to explore and to develop opportunities for the development of the productive economy
4. Strengthen community institutions, especially indigenous people customary institutions
5. Make the local community as a partner of protected area authority, who participate actively to support the management of conservation areas

Policy on Buffer Zone stated in Government Regulation No. 28 of 2011 on the Management of Protected Areas and Nature Reserves in Chapter V of article 44 to article 47. While community empowerment and participation stipulated in Article 49 and Article 50.

More details, article 49 stipulate that the Government should empower communities around protected areas and nature reserve in order to improve their well-being, which includes:

1. The development of community capacity
2. Providing access to the use of Protected Areas and Nature Reserve

Community development itself is done through:

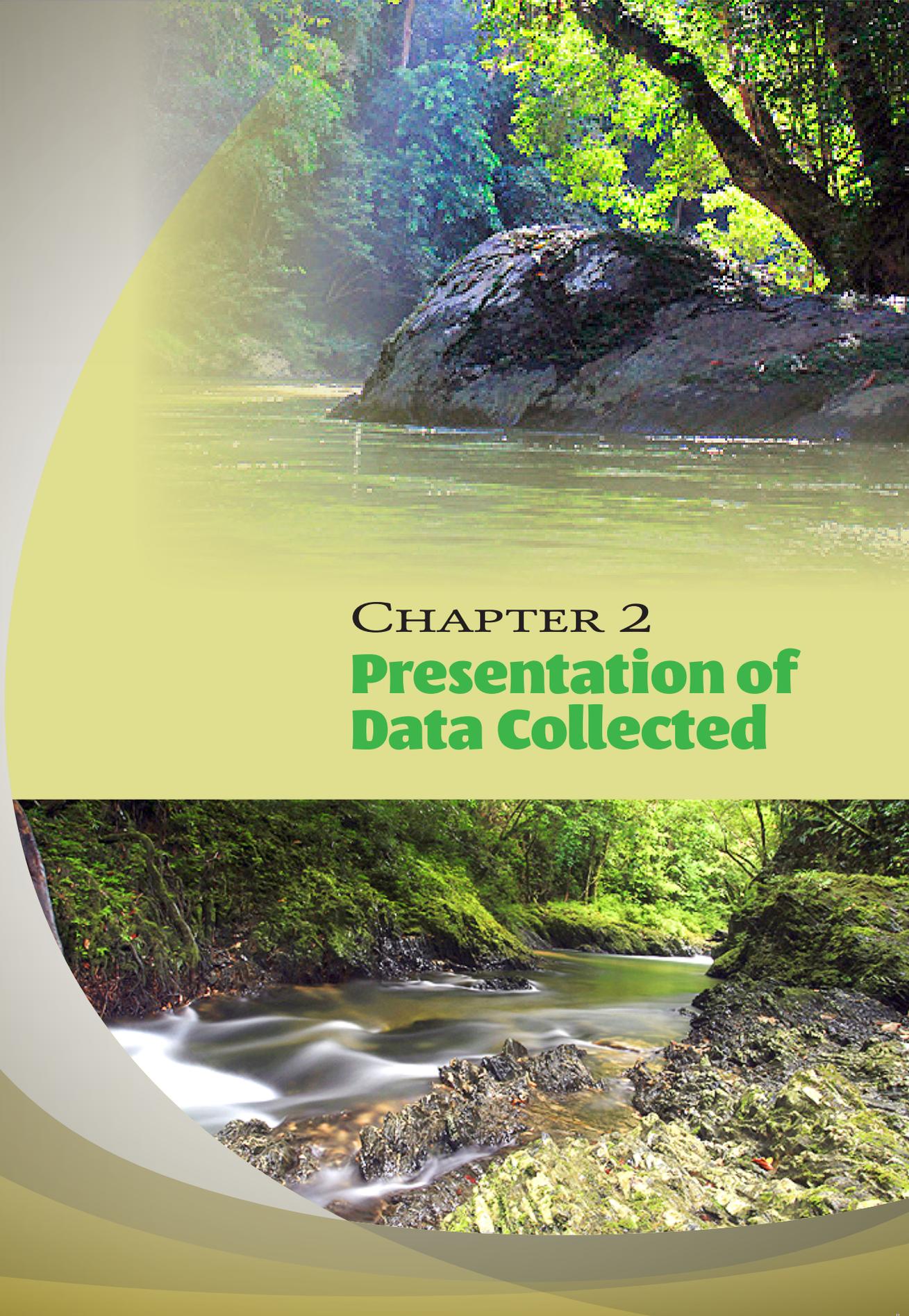
1. The development of the conservation village;
2. Granting permission to collect non-timber forest products in utilization zone/

block, permits the use of natural resources traditionally, as well as the permit for environmental services;

3. Facilitating partnerships between forest utilization license holder with the local community

Local Communities around the region Protected Areas and Nature Reserve through Government Regulation No.28 of 2011 article 50, generally are given the right to know the management plan implemented by the management authority of the conservation areas. The local community is also granted the right to provide advice and judgment as well as oversight of the management of PA and NR.

Therefore, properly the management authority, in this case Betung Kerihun National Park office should optimally utilize public participation, not only as a partner for the management of national parks, but also taking a part to supervise park's officers and measure the appropriateness of policy taken to improve the effectiveness of the management of the park. One of the misthrough community patrol activities, and the establishment of a forum or media for communication among stake holders that support the management of the national park. For example *Gedepahala* Forum whose members vary from individuals, NGOs to international organizations that support the management of Mount Gede Pangrango NP and Halimun NP.



CHAPTER 2  
**Presentation of  
Data Collected**





## 2.1 Problem Faced by Bentung Kerihun NP Related to NFTP

Based on the management plan of BKNP year 2000 to 2025, several problem faced by the park related to NFTP within park areas, especially on the west side of BKNP are:

### 2.1.1 Illegal fishing

Illegal fishing had been recognised since 1990's where fish traders from Sarawak paid local community to fish, especially Sema fish to be sold in a very cheap price to them. Most of the fish traders are coming from LUBUK ANTU Sarawak. Based on our interview with fishing mania tourist from Sarawak, semafish prices in Sarawak area reach 300 ringgit Malaysia for every kilogram (about one million dollars). Meanwhile, if sold in the United States, worth about US\$ 600 (more than six million dollars) for each kilogram. Sema is increasingly a rare fish. Besides uncontrolled fishing, this fish requires a long period of time to breed. Sema fish begins pawning in the age of five (5) years. More detailed information about this fish is needed to attempt fish farming considering its big market availability and its promising price.

### 2.1.2 Collecting Gaharu

Based the management plan years 2000-2025, taking gaharu was done quite intensively in the national park area which cause its scarcity. As a result, gaharu collectors take the commodity up to Sarawak through several rivers such as Sibau, Kanyau River and Nanga Jenait River that cut off BKNP region. The gaharu collectors are mostly coming from the village Kedaman, which is located adjacent to Putussibau city.

### 2.1.3 Bird capture

From the observation a IPB student, Gilang Dawn Ramadan in 2006, local communities are catching birds to meet the demand for having birds in a cage by the Javanese people who work in oil palm plantations. The local people now

start to keep the bird in a cage as well. In Sadap Sub Village there are at least three (3) bird cages. One boy even chaining 3 green birds as a pet.

## 2.2 Natural Resources Utilization by Local Community

Local communities around the park are so far utilizing natural resources from park's region. Non-timber forest product collected are rattan, fruit and vegetables, and medicinal herbs, gaharu, dipterocarpus seeds, wildlife hunting, fishing, and taking a swallow nest primarily in the upstream region Bunan River, where there are at least 55 caves controlled by certain families. Wildlife poaching is considered in a state that has not worrying yet as it is governed by the laws of the respective indigenous Dayak communities.

Some types of river fish caught by community is sema, seladang, saga, lakut, burau and jelawat fish. Below the staircase of longhouse in the Sadap Sub Village there are small pools measuring 2x2 meters. According to Yani - long house dwellers who is also national park contract workers - they keep tilapia fish in the pond to meet the needs of families. When I was in the house long, those small pools looked neglected. I also did not see any fish in it.

Demand for freshwater fish for local consumption in Badau city is actually quite high. Badau City is a developing city where workers from nearest oil palm plantations are shopping. Various activities related to oil palm plantations and palm oil mills are also available, such as tractor repair shops, autoparts stores, and others. There are several restaurants, one of which we visited said that they get supplies of catfish from Sintang. The city is pretty far that caused the demand of catfish is not always met.

Along the road from Matasoto Lubuk Antu, we did not see stalls selling fruit. Even when we walked inside people's farm, langsung or lanzone fruit, rambutan and manggosteen fruit are left alone to fall.

Yet while in Lubuk Antu, there are open stalls selling a variety of fruits such as rambutan, langsung, durian, duwet, and others. In the city of Kuching, langsung fruit are obtained from the Indonesian region.

## **2.3 Community Development Programs Implemented by The Park**

Actually there has been quite a lot of assistance provided by the National Park to many villages surrounding park's area. Locations and community development activities undertaken by the BKNP can be seen in appendix 1. Here are some of the community development activities which we summarize from the report of evaluation conducted by the BKNP.

### **2.3.1 Sadap Sub Village**

In 2011, Village Development activities are implemented in Manua Sadap Conservation Village which include fish farming, vegetables farming, pigs, chicken farming, and Ginger Cultivation. The assistance is in the form of loans which then should be rotated to another group of farmers. There is also assistance for rubber seedlings, long house renovation, nature tour guide training, honeybees training.

The local community seems friendly with park officials who accompanied us. In the Regional I office located in Mataso, only two employees who have civil service status, the remaining of 6 people are contract workers, drawn from the surrounding community. In the Sadap Sub Village, Dayak Iban long house, there are three people working as contract labor in BKNP.

The long house was painted as its renovation in 2011 for the Tourism Development Program in Sadap sub Village, since the longhouse can also function as a 'guest house' or inn for tourists who come to visit BKNP. People are also encouraged to maintain the cleanliness of

the house. Educational tour guide and English language training has also been given to the youth mainly involved in the development of eco-tourism national park.

Tungku – village ecotourism chairman-mentioned that small number of tourists visiting the village, especially foreign tourists, is a constraint which make the spirit of the community to develop ecotourism is not fiery anymore. People are no longer keeping their house in order to keep it looking clean.

Another program is the distribution of a total of 100 broiler chicken for 2 farmer groups @50 chickens and 2 pigs for each family. All of the chicken died due disease (Sapar disease). For pigs, to date people still maintain them at the back of their home. According to the people, raising pigs are easier since they eat left over foods of the family.

The distributed rubber tree seedlings are planted in the fields for its sap in the future. In saping the rubber tree, people are still using natural materials, such as leaves to direct the sap to a bamboo as a storage device.

### **2.3.2 Asistances to Other Village/Sub Village**

Social assistance in 2013 around protected areas conducted by the National Parks in Tanjung Lasa Village, NP Management Division Region I, are in the form of livestock in Nanga Potan and Tanjung Lasa Sub Villages and corn seed in Tanjung Lasa Sub Village. From the parks' evaluation report, raising pig is still going well, although the pigs provided are too small and need time to be sold. For seed corn, by the reason that people are too busy doing farming, planting corn is not done yet.

Banua Tengah Hulu sub village located in Banua Tengah village, North Putussibau district, Kapuas Hulu Regency, Park Regional office I, Mataso, received assistance in the form of cash managed by a big group named 'BANUA Maju'. Village communities used the money to buy pigs,

gaharu seedlings and fish juvenile. For the sub groups dealing with Gaharu seedlings, members of this group planted gaharu seedlings in their farm which relatively not far from the village. This allow the members to be able to control the growth of the gaharu seedlings planted. Most of the gaharu seedlings grew well though there are few that failor die. This may due to to various factors, the first is when the new seeds brought from the seller to the members, long journey of transportation make the seeds became withered. Second, gaharu seedlings are planted in an open area, or unshielded so that the direct sunlight make the seedlings died. For fish juvenile, all members of the group agreed to buy juvenile of bawal fish. The fish was purchased from Sintang.

In Banua Tengah Hilir sub village, one of sub villages in Banua Tengah village, North Putussibau district, Kapuas Hulu regency, park's regional office I, Mataso, social assistance given by the park was used to buy pigs and gaharu. A group of farmer bought pigs for 18 households of the group members where each member gets a grant of two pigs. Gaharu seeds are planted in each member farm. Based on evaluation by park officials by sampling in 2013, most of the gaharu planted seedlings grow well. Only a small percentage are dead or withered. This is because the gaharu seedlings are exposed to sunlight without shading.

In 2010, in Pulau Manak village, Embaloh District, Hulu Kapuas regency. Betung Kerihun National Park authority and Sangkean Baro Conservation Group (KKSB) and Katayot Agency have worked together to implement treed option and longboat adoption scheme, as the follow up of cooperation between PT. Ralience Securities, IDEA and BKNP. The realization of the activity is the preparation of 3 hectares area (0.6% of the plan) planted by rubber trees as many as 1220 (78% of the deal), 225 sugar palm (86% of the deal) and no gaharu planting (0% of the deal). While three longboat are ready to be used.

In Padua Mendalam sub village, park regional office II, assistance was given for fish pond making and purchasing the juvenile of tilapia fish. For the same reason, because people are too busy working in the fields, fish ponds construction was unfinished and the juvenile of tilapia fish have not been bought. Assistance given to Datah Dian sub village -a sub village in Datah Dian village, North Putussibau district of Kapuas Hulu regency – by providing pigs and fish juvenile, but suddenly-without notice to the national park – people converted the aid into an water vaccum machine (for the purposes of taking water from the river in the dry season). The fish juvenile have not been bought with a reason that people are too busy working in the fields. In Nanga Hovat village, part of Datah Dian village, social assistance provided by the national park was used to make a fish pond and to buy fish juvenile (semah, carp and tilapia).

## 2.4 Observation on The Field

### 2.4.1 Sadap sub village

Sadap sub village is the 'entry point' at the most northern entrance to visit BKNP. There is located BKNP resort office where the duty officers are contractual workers who live in the long house.

In addition to the long house with 27 doors/ rooms, there are about 10 houses around it built separately. The construction of new houses separated from the longhouse is because there is no longer area available that can be used to build a new room that normally build at the far end of the long house. Based on the permission of the elders, a new pair is allowed to build houses separately from the long house.

Palm trees that grow around the village look old, with no rejuvenation. Fruit trees are found in the woods behind the house, such as rambutan. Pigs are raised in a cage located behind the long house.

There are wooden boxes with each box containing two pigs. At Yani's home - a contract workers of BKNP, there are 3 boxes with pigs inside, two boxes with two pigs inside and a box with 5 years old pig, who was his father's favorite pig. Local chickens are running around and some of them are kept in the cage, especially the one used for cock fighting.

Each family of Dayak Iban in Sadap sub village on average is having one motorcycle used as means of transportation, especially for the kids to school. Some families even have up to 3 unit motorcycles. In Sadap sub village the elementary school is only up to grade 4, afterwards the children have to move to attend other school in another village. When the parents are busy in the fields, children ride motorcycle by their own to school. Though still only at grade 5 in the elementary school (about 11 years old), children of Dayak Iban are advanced in riding motorcycle.

At least there are three cars parked in Sadap sub village. There is also a cool motorcycle worth about 30 million. This tells that the village communities economically is good enough, as seen from their ability to buy motorcycle. Some families also have canoes and motor boats used for fishing, or rented to tourists.

Some of the things that we observed while in the Sadap sub village are:

#### 2.4.1.1 SACRED PLACE FOR GAWAI RITUAL

In Sadap sub village, consultant stayed at the Iban long house. We went to a small forest in the north part of the sub village which was once a farming field. It is a mutual agreement between Dayak Iban community in Sadap sub village for not disturbing the forest because there are springs in it that used to meet people's daily needs of clean water, such as for

drinking, cooking by the people who live in the Sadap sub village. In the forest there is a point where the Iban community execute a ritual called Gawai to worship their ancestors once a year on 2<sup>nd</sup> of June.

At the point placed a Large Cross measuring about 50 cm embedded in the ground. In the vicinity of the cross spread some coins that describe an expectation to be able to earn much money from the abundant harvests. Salamat - our guide at the time - explained that during Gawai celebration the entire population of the sub village will come to make offerings of various crop fields. They will slaughter pigs, roasted and eaten them together by all the villagers in that sacred point. The head of the slaughtered pigs implanted near the cross as an offering to the ancestors. The entire meal brought and cooked during the ceremony, should only be spent on location, should not be taken home.



**Figure 1.** *Chicken's Cage at Sadap Sub-Village*

What is surprising to me, according to Prof. Youn, this ritual is almost similar to the traditional ritual in the South Korea where farmers begged their ancestors to give a good

harvest in the coming year. Similar ritual is also performed by the Mongols. The Koreans came from Mongolia since they long similar traditional ceremonies. One characteristic of Mongolian descent is 'bluespot' or blue marks on the buttocks or back of the children during the toddler. Salamat stated that the same sign is also owned by Dayak Iban children.

During the ritual the entire family members of Dayak Iban who live and had lived in the long houses in Sadap attend the ceremony, including those who live in Sarawak, Malaysia. The long house with 27 doors inhabited by about 40 families, about 20 people have family members who are currently living in Malaysia. The relatives who worked in Sarawak Malaysia brought the whole family back home during the ritual. They may contribute to the funding of the ritual. In the last year ritual, they brought a high quality 'fighting cocks' in the event of cock fighting with neighboring villages. Bets are placed at between 5 and 10 million. In cock fighting event in 2013, the cock from Sadap won and the owner got the betting money of 10 million rupiah.

Beaded necklace that I bought for 100 thousand dollars, its material are from Sarawak, which according to Salamat are smaller and more delicate, so the quality of the necklace is better. These beads may have been taken by the Iban relatives working in Sarawak.

#### 2.4.1.2 HANDY CRAFT

Handicrafts produced by the Dayak Iban in Sadap sub village are:

##### 1. CRAFT FROM BEADS

Crafts from beads are in the form of necklaces, bracelets, custom clothing women and men. Salamat only knew the price of the beads his daughter made which is 100 thousand, while for the bracelet, cover the shoulders and head

cover (cap decoration) he had no idea about the price. To get handycraft material of beads they can buy them in Putussibau. While beads are finer originating from Sarawak.

##### 2. WEAVE FABRIC

There are two (2) main features of the woven fabric that are basic brown color and colorful patterns. The fabric used for traditional clothing and the rest are for sale. Basic brown colored long scarf worth for 150 thousand dollars. For the colorful woven patterned, both Salamat and his mother, do not know how much the price is. In front of the doors there is an open space along the house, where several looms are stored. During the day the ladies weave accompanied by children playing. When I was there, some men were seen asleep and some of them were also seen keeping children/grandchildren.

##### 3. WOVEN MAT

So far the demand of woven mat made of rattan and bemban leaves is increasing, but the raw materials are not available. Bemban tree is hard to find, as well as it is hard to find rattan. Price of mats ranges from 75 thousand to 100



**Figure 2.** Location ancestral shrine used by the Iban community in Sadap to execute Gawai ritual. Pinch of soil is taken from the site to be planted in the field at the new location for a better harvest

thousand rupiah per meter, depending on the style and the material. Dayak typical wicker basket rest for sale at the Hotel where we were staying in Putusibau.

Telibay – a lady who has often been sent to various exhibitions throughout Indonesia by WWF and local government of Kapuas Hulu regency to promote the regency of Kapuas Hulu and handicrafts produced by the local community – explained that during the exhibitions nation wide, fabric produced by Iban community are competed with fabric produced from other parts of Indonesia that use machine for its production, which make them sold at a cheaper price. Therefore, according to her, it is better to sell the fabric directly to the buyer eg. tourists at the site of a long house, since it is more profitable than the sale during the nation wide exhibition.

Most of the handicrafts are made by the women during their spare time between farming activities, cooking and caring for children. The young women make beaded jewelry, while the mothers and the elders weave fabric. Salamat's girl aged 14 years makes variety of crafts from beads. His wife and his mother make woven fabric with typical Dayak Iban pattern.

#### 2.4.1.3 SHIFTING CULTIVATION

According to Salamat, in the past, local communities were doing shifting cultivation in forest on the northern part of the sub village. Currently, this area is no longer used for farming since there is a spring that provides water for the daily needs of village communities for drinking and cooking. Prohibition of farming in the area, causing some families hire fields from other societies, based on the lease at a price that is not too expensive.

The location of farming field that we visited was owned by Haga – a mother, cousin of Salamat. Ms. Haga opens her farm at the same location for six (6) consecutive years. The workmanship is:

1. Early July is spraying weed killer (Annas) to eradicate the weeds that grow in the fields.
2. Over a period of a month, at the end of July / beginning of August she burn the grass.
3. After the burning, she collect the burned reed stems, and burn them again to ashes. This ash is expected to become fertilizer for the land to be planted.
4. In September, an upland rice crop is planted. In addition to rice, the farmers also grow a variety of vegetables such as beans, for their own consumption.
5. If there are weeds among the rice crop, farmers use herbicide Gramoxone, to eliminate the weeds.
6. With a farming area about 1hectare, rice produced is about 40 bags or 200kg

Furthermore, it is noted that the Iban community that inhabit Sadap sub village are immigrants from Sarawak, therefore they have no indigenous land ownership. The Dayak Iban residences normally are along the river. Today most of the Iban rent farmland from Dayak Tamambaloh, especially in the area of Pulau Manak. Without tenure, it is quite reasonable for the Dayak Iban currently using the same land for several years.

Instead, people of Dayak Tamambaloh in Labian Iraang village still practice forest clearing for making farmland. Fields used previously will be planted by wooden trees (rubber or fruits) or leased them to cultivators who need farmland eg. Dayak Iban. Therefore, forest clearing for farming purposes no longer has to spin back to the same land, but the tendency is increasingly wide spread.

#### 2.4.2 Agriculture and Animal Husbandry

In some villages there are also assistances in agriculture and animal husbandry from BKNP, as well as international institutions such as the GIZ (German) and FORCLIME (USA). The aid is in the form of livestock such as cows, pigs, and chickens. We see that the scheme existed in the



**Figure 3.** An old lady is weaving cap in longhouse of Sadap sub village and woven fabrics

field to date and maintained well are cattle fattening and raising pigs. The implementation of cattle farming is going pretty well since 2008, this is indicated by healthy condition of the cows even without specific treatment. This is due to the wide availability of natural forage such as grass and leaves. Chicken farm is no longer there, based on information obtained chicken

farms is hampered due to an outbreak of bird flu. Another thing is the difficult to find and expensive chicken feed (pellets), which must be obtained from Putusibau city.

In the field of Agriculture, local rice eg. brown rice, black rice and Seluwang rice have been developed in Malapi village, South Putusibau.

In the village there is a good farmer group called Kereng Sio Makmur Farmer's Group. The rice is using organic fertilizer with direct guidance from the Regency Agriculture office. Abundant raw materials, especially organic materials makes it quite easy to get organic fertilizers at a cheap price. Wetland area is cultivated without irrigation systems, so that in a year the harvesting can only be done twice.



**Figure 4.** Cattles in Embalob Hulu

With the guidance of the local Regional Agricultural Office (Putusibau), the farmers have done pretty good packaging per 2 kg (as figure 5), although still in limited quantities. The current program (year 2014), the government will be developed 1500 ha of paddy field producing Seluwang rice. For, although the Central Government (Ministry of Agriculture) is challenging to develop up to 5000 ha, but the local area is not ready yet, especially in terms of human resources and equipment available for clearing and preparing the land. Currently the land opening and management are conducted in traditional and simple ways.



**Figure 5.** Red rice, black rice, and Seluwang rice produced

### 2.4.3 Tourism and Culture

Ecotourism development in the presence of the Betung Kerihun National Park (BKNP) still runs slow and is limited to certain circles such as NGOs, researchers in particular (cultural). This is mainly due to limited transportation, the information availability is also limited, as well as a constraint that the Indonesian immigration office can not issue a Visa on Arrival at the nearest border (border of Malaysia and Indonesia). We found out that the immigration office does not have adequate IT facilities yet to support the system as well as no adequate electricity. Travelers who would get through the border of Malaysia (Sarawak) are forced to go to Jakarta and later to Pontianak, then to Putusibau.

Kapuas Hulu Regency has good potential of tourism and cultural development that have not been explored to the maximum. There are many unexplored potential, particularly the potential of nature-based ecotourism. More than 60% area of the Kapuas Hulu regency, is an area of forest conservation and protected

areas. According to Mr. Anton, secretary of the Regional Development Planning Agency, this condition is a problem that must be accepted as a blessing. The Local Government hopes the field of ecotourism and culture can be a main stay of the regency revenue. Despite the fact that the budget provided for the development of ecotourism to the Regency Tourism Office is only about eight hundred million rupiah, including the budget for employee salaries.

Facilitated by WWF Indonesia, Community Tourism Kapuas Hulu (KOMPAKH) was formed in March 2005, whose members consist of 11 (eleven) local community groups working in the field of tourism. KOMPAKH – chaired by Hermas Rintik Maring from Dayak Taman – encourage ecotourism development in the area of Kapuas Hulu through various marketing of natural and cultural tour packages and tour guide training. KOMPAKH coordinate well enough with the Regency Tourism Office and BKNP in receiving visits from international tourists.

Nevertheless, a more equitable distribution of international tourists to some long house to different Dayak groups needs to be further regulated. In Sadap sub village, Tungku -village Ecotourism Chairman - complained of the small number of foreign visitors who traveled

in Sadap. Tungku along with some of his friends took the initiative to market fishing mania sport through Youtube. These efforts proved to be successful since when the ITTO team came to Sadap, we met five (5) visitors from Singapore who did fishing mania for 6 days in BKNP.

#### 2.4.4 Traditional Market Condition (Putussibau and Badau)

From Putussibau to Badau, there are three (3) traditional market located in Putusibau city, Lanjak sub-district and Badau city. 2 (two) of them are quite big: Badau and Putussibau where people who shop are coming from different regions. In Putusibau traditional market various food stuffs and other products are taken from the city of Pontianak, such as fish/shrimp/squid and coffee. While market in Badau, various food stuffs, including fish, tofu, chicken and vegetables are brought from Sarawak, Malaysia.

Many types of fresh water fish in big sizes - ranging from 10 s/d 25 kg - easily found in the Putussibau market. Among them are Seladang fish, Tama fish, stone fish, and others. Seladang fish is an expensive fish, about 100 – 120

thousand rupiah per kilo. The fish population is now dwindling. There is also Tama fish, although the fish that we encountered was quite large, about 15 pounds, according to the fish monger, this type of fish is still easy to catch. In the market in Langkat regency, only toman fish that we encountered.

Different types of green vegetables are available in the market, especially various types of forest ferns. There are also different types of mushrooms, boiled bamboo shoots and boiled jackfruit. In the market of Badau city, almost all vegetables are obtained from Sarawak such as cabbage and sprouts. The seller argued that the vegetables purchased from Sarawak are still in a fresh condition since it is stored in the fridge (box ais). Whereas if they buy vegetables from Indonesia region, they have already wilted.

When we were in Labian Iraang village, which has a quite successful vegetable planting, the vegetable buyers come to the village during the day and vegetables sold are already looked wilted (Figure 7). There for in community development programs, vegetable storage management system is needed to be able to maintain the fresh condition of vegetables in the market.

Especially for commodities such as jackfruit, banana and boiled bamboo shoots, they have the potential to be developed further. Thailand has been known as a vegetable exporting country for jackfruit, banana and boiled bamboo shoots in cans. The potential of bamboo plants are quite big in the area around the Betung Kerihun National Park - betung itself means bamboo - bamboo shoots vegetables in air-proof packaging has the potential to be sold to Sarawak, Pontianak or to meet local needs.



**Figure 6.** Seladang fish in Putussibau market



**Figure 7.** *Vegetables sold in Labian Iraang village*

Big stalls selling many kinds of fruits such as olive, watermelon, rambutan, bananas, are seen in Putussibau market. We only saw one fruit vendors while in Badau market. Yet when in LubukAntu, Sarawak, there are small shops that sell various kinds of fruits. Stalls selling a variety

of fruits, something worth a try to be opened in Badau market.

Refined products that we encountered in the three markets include fish crackers, honey, and a food called ‘dodol’ made of variety of materials such as purple sweet potato, papaya and pumpkin. Fruits such as rambutan and jackfruit can be processed as dried fruit stored in containers. ‘Dodol’ production can be resumed as ‘home industry’ with better marketing system. The idea to open a kiosk in the Badau Market need to be considered.

These kiosks will sell a variety of refined products produced by the villagers in the buffer zone BKNP.

of refined products produced by the villagers in the buffer zone BKNP.

In addition, we also observed a number of Sungkai trees planted in the people’s farmland. Sungkai wood can be used to make pencils. If the amount is sufficient, the production of



**Figure 8.** *Refined product in Putussibau market (fish cracker and honey)*

Sungkai wooden pencil can become one of the home industry products.

In addition, we consider the adjacent Maros nature reserve where there are many parent tree of Shorea species that can produce tengkawang seeds. Planting Shorea trees that produce tengkawang seeds can be done by using its cuttings. In this way Shorea trees can produce tengkawang seeds at the age of 6 years, and then every year, not bound by seasons as Shorea trees that grow in the wild. Shorea tree planting is important because the tengkawang oil price reaches 2.5 million rupiah per kilogram, compared to selling the seeds only between 2,000 to 7,000 rupiah per kilogram. Residue obtained from the distillation of tengkawang oil can be used as fodder for cattle and pigs.

One of the plants that have high economic potential but has not been handled well is palm trees that grow in the woods and in the fields of society. People only take water from palm trees to be processed into alcoholic beverages for local consumption. Other products from palm trees are liquid sugar, 'semut' sugar and sugar cubes that have a pretty good price. Liquid sugars are

needed by hospitals and coffee shops at national and international level. In addition, fruit from palm trees is in great demand by migrants from Java who worked for oil palm plantations, especially during Eid al-Fitr. This fruit, called kolang kaling, can also be used for mixed ice drinks. What is important is the packaging so that the product can be used within a few months.

The local cultivators only use chemical fertilizers. All vegetables and fruits are using chemical fertilizers. They have no knowledge of how to make organic fertilizer. Training on how to make organic fertilizer seems urgently needed to reduce the cost of farming.

In addition to composting household waste and parts of trees, farmers can also get organic fertilizer from manure. In Embaloh Hulu, there are site that accommodate 31 cows. Manure from the cows can be used for biogas, and the waste can be used as organic fertilizer. Besides for cooking- it is observed that to every family have a gas stove for cooking – the biogas can also be used for lighting by using gas lamps.





## CHAPTER 3

# Results of Analysis and Recommendations





### 3.1 The Steps That Need to Be Taken

In the draft of Minister Decree on communities development around the nature reserves and conservation areas, the management authority need to establish a working group who have tasks conducting assessment on economic condition, typology of community, interaction between community and protected areas and identification of natural resources, as well as the proposed recommendations of empowerment activities, monitoring, evaluation, supervision and reporting on the implementation of community empowerment.

While waiting for further development of the regulation, main things that need to be done by BKPN are:

#### 3.1.1 Identification of the Village Potency

Before carrying out community development activities, park authority had undertaken a project to identify village potency. The data that has been collected using a variety of methods from FGD to field surveys, is used to determine a variety of community development activities. To complement the collected data, the next tasks that should be considered by park authority are:

1. Checking the validity of the previous data collection. Data collection focused on the types of seasonal crops, timber trees, fish/ animals used/cultivated by the community that have a good selling price. The potential for further refined product of resources should be recorded and predicted, for example, tengkawang oil production process (as an exhibition for tourists), packaging of dried fruits, manufacturing of souvenirs, preserving fish/fruit, the development of fast-growing plants such as teak, etc.
2. Analyzing the distribution of land tenure and resource ownership. Currently Dayak Iban lease land from Dayak Tamambaloh at a low price, especially in the area of Manak

island. As the land owner, however, Dayak Tamambaloh roles in the determination of community empowerment programs that will be implemented need to be considered. Similarly, ownership of a variety of timber plants in farm land, eg. rubber, gaharu, etc., need to be identified so that the profit-sharing system, or the resource used do not have any economic implications.

3. Perform predictions of plant species that can be developed to meet local needs or for sale, such as the possibility of developing Sungkai tree in the people's farm land, or other wooden species, by using cuttings method so the trees can be harvested only after 6 years old.

#### 3.1.2 Survey of the NFTP/Agricultural commodity

The survey consist of two commodities which are:

1. Agricultural/NTFPs commodities required by communities in several major cities eg. Putusibau, Badau and Langkat. For example, a restaurant in Badau depend on catfish supply from Sintang. Considering that Mataso is closer than Sintang, there is a chance for people in Mantaso for fulfilling catfish demand. Similar thing works for other food commodities.
2. Agricultural/NTFPs commodities inside and outside park area used by the community and which can be developed for community development programs, such as bamboo, mushrooms, ferns, Bemban, Sungkai, shorea, etc.

Expectedly, the survey will also see public response to the production plans of certain commodities, such as the sale of fruits, both fresh and packaging dried fruits, bamboo shoots as well as the local timber market in the form of boards, furniture or doors/window.

### 3.1.3 Identification of Community Typology

Identification of the community typology include the typology of economic social and cultural conditions of the people who are the target of community development activities. It is very necessary to understand the character of the community, daily behavior, norms owned and their attitude towards empowerment program that will be developed. It is very important so that the failures of the previous community development activities will be no longer repeated, for example, the Dayak community is gatherer societies, their tendency is to accept everything quick and instant, therefore any activities that require extra work and time do not work well, eg. maintenance of broilers. The involvement of anthropologists is required in this activity.

### 3.1.4 Capital Availability Analysis

At the time of agricultural products/NTFPs already have a good market, it is necessary to scale-up its sales by expanding access to buyers so that the profit gained could be higher. In this case, supported capital that do not harm the publicis needed. Credit Union existence in West Kalimantan so far has been able to help farmers to save money and avoid money lender. This issue needs to be studied further. Credit Union system is expected to provide an injection of venture capital for people who already have a promising market.

### 3.1.5 Mapping the Areas of Ecological Support to Community Development

1. *The area flooded regularly.* From our observations in Labian Iraang village, vegetables grown on land that is flooded periodically have a pretty good production. Social assistance that was 3 million rupiah, have now developed to 15 million rupiah.
2. *The area with stagnant inundated water that is suitable for the growth of Bemban plant*

*species.* Bemban leaves has been used by the Iban community as raw materials for making mats. The plant is now difficult to find. Replanting of Bemban plant species is needed to meet the needs to produce woven mats.

3. *The areas that ecologically support the growth of bamboo.* Bamboo is a native species that is relatively abundant in the region around BKNP. Bamboo can produce various kinds of advanced products, such as bamboo shoots (in air-proof packaging), skewers and chopsticks.
4. *The area that can produce and be planted with various types of NTFPs, both outside and inside the region BKNP.* Each type of NTFPs in order to grow properly, require specific ecological conditions. For example rattan, hazelnuts and shorea (tengkawang seeds) and other species considered to be developed for community development.

### 3.1.6 Development of Technology to Optimize the Product

Some of the technologies that need attention are:

#### 3.1.6.1 THE TECHNOLOGY TO ACCELERATE THE GROWTH OF TIMBER TREES

The technology is now widely available. Sungkai is a local type that can be used for a variety of ornaments, furniture, floor boards or pencil. With consideration of market demand in Sarawak, this type of tree has a bright prospect to be developed into a community forest. The trees can be planted in areas that are abandoned during shifting cultivation which normally planted with rubber trees. Another species of tree to be considered is Shorea tree that produce tengkawang seed. It is expected that by planting this Shorea tree in the community forest, tengkawang seed can be produced each year, so that it does not rely on natural Shorea forest plant that produces tengkawang seeds

each 5-year period. Option of technology are needed to be able to speed up the harvest time, one of them is by cuttings method. Parent tree to Shorea cuttings can be taken from the Mandor nature reserve<sup>1</sup>.

### 3.1.6.2 STORAGE TECHNOLOGY OF AGRICULTURAL PRODUCTS

Different types of vegetables in the Badau market are imported from Sarawak. To improve the quality of the vegetables, a good way to storage (plastic wrapping) and the right time of delivery eg. at night, need to be explored so that the vegetables stay fresh when it came to the sellers in the market. For vegetable commodities such as jackfruit, boiled bamboo shoots and banana, they can be stored in air-proof packaging to keep the product for not easily decomposed. Similarly, dried fruits of rambutan, or can died papaya can be stored in plastic/air-proof packaging.

Technology of agricultural products/NTFPs diversification.

1. As explained earlier, so far people only take water from palm trees later to be processed into alcoholic beverages for local consumption. Other palm tree products such as liquid sugar, sugar ants and sugar cubes have a pretty good price. Liquid sugars are needed by hospitals and coffee shops at national and international level. The use of palm sugar as sweetener is not only for traditional drink like ginger, sugarants are also used in the tobacco industry (to give a sweet taste), as ingredient incakes, syrup and baby food. In addition, the fruit of palm trees called 'kolang-kaling' is in great demand by migrants from Java who worked for oil palm plantations, especially on Eid

<sup>1</sup> Aldila Paramita, Shut, staf Direktorat KKBHL, penelitian S1-nya adalah pembuatan stek pucuk pohon Shorea dengan menggunakan pohon induk dari Cagar Alam Mandor, Kalimantan Barat.

al-Fitr. Kolang-kaling can also be used for mixed ice drinks.

2. Next is the cocoa trees where the beans can be sold at a good price and the flesh of the fruit (cocoa shells) can be used as fodder, and made as briquettes (charcoal for cooking).
3. Bamboo trees are mostly found along the river, they have a variety of products that can be used by the public. Besides fulfilling people's daily needs, such as lemong, building and rafting materials, bamboo is also used for furniture, skewers, chopsticks, bamboo Kerei, crafts/souvenirs and other creative products. The easiest first step is to buy a machine to produce skewers and chopsticks.
4. Making processed food called 'dodol'. In some places we saw various types of 'dodol' made from papaya, pumpkin, black rice, and others. Various types of fruits abundant in the buffer zone have the potential to be processed into 'dodol' food like jackfruit, rambutan and others.
5. Forest mushroom. Various types of forest mushroom has been utilized by the public for cooking. The development of mushroom domestic industries as chips is recommended.



Figure 9. Example of ant sugar

### 3.1.6.3 REFINING TECHNOLOGY

Dayak community has been accustomed of the process to refining sugar water to be alcoholic beverages. Other materials that can be extracted is tengkawang seeds to produce tengkawang oil. Bengkayang Regency in West Kalimantan has been selling this products in packaging worth hundreds of thousands rupiah.

### 3.1.6.4 TECHNOLOGY TO MAINTAIN SOIL FERTILITY IN INTENSIVE USED FARMLAND

Many of the Dayak Iban has abandoned shifting cultivation systems and tend to use the same plot of land that make the radius of farmland shrinked. This condition of using the soil continuously will reduce its fertility. This worsen with the soil type of Kalimantan region which is the infertile red-yellow podzolic. The impact of excessive use of herbicide to kill the grass needs to be researched, both on soil fertility and on the quality of river water since later the herbicide may affect riverbiota.

### 3.1.6.5 BIOGAS TECHNOLOGY

Every door in the long house, and the houses around it, use a gas stove for cooking. The use of firewood is confined to boiling water and cooking the rice. For daily food they use a gas stove. 15 kg gas cylinders is purchased from Sarawakat a price of 155 thousand rupiah. Development of biogas from animal dung or compost, have a bright future since it can save the cost of the household to buy gas as well as for electric lighting using gas lamps. Moreover, it was noted that in Embaloh Hulu, there is a site that accommodate cattle about 31 cows.

### 3.1.6.6 TECHNOLOGY OF COMPOST/ORGANIC FERTILIZER/LIQUID FERTILIZER

So far farmer only use chemical fertilizers to increase production of vegetables and fruits. Composting can be done with the use of household waste and the parts of the trees.

In addition, the residu of the process of biogas production from manure, can also be used as organic fertilizer.

### 3.1.6.7 TECHNOLOGY OF HIGH QUALITY RUBBER PRODUCTION

The Dayak Iban currently tapping rubber latex with the traditional way. The sap is running through a leaf to bamboo tube as its storage. With the current decline price of rubber, people keep latex rubber stock piling underground behind the house waiting to a good price. Training is required for the community on the best way to tap or processing and storing high quality rubber latex that can be sold at a high price.

## 3.1.7 Training for Community Capacity Building

In the draft Government Regulation on empowering communities around nature reserves and conservation areas, it is mentioned that strengthening the capacity of community development is done to increase people's knowledge and skills, to change attitudes and institutional strengthening. Therefore managers of nature reserves and conservation areas and or with partners in accordance with their authority, should conduct training activities; mentoring; and or extension.

Trainings that should be conducted are:

### 3.1.7.1 TRAINING TO INCREASE PEOPLE'S SKILLS

1. Trainings related to ecotourism such as tour guide, handicrafts, developing interpretation trails.
2. Training of developing seedlings for sungkai, shorea, coffee, chocolate, pepper, etc.
3. Trainings for economic development in order to implement required technology to increase people income as mentioned in [point 3.1.5](#).

### 3.1.7.2 EDUCATION AND TRAINING ON COMMUNITY BASED PATROL

Training on *Community Patrol* aim to make people who settled around the forest area have the knowledge, skills and attitudes to keep forests from various existed disorders. After training, the community is expected to understand such things as knowledge and understanding of forest laws; knowledge and understanding of community-based forest protection (community patrol); ability to determine the direction and control of the territory; ability to carry out forest protection; and the ability to write a formal forest crime report to police.

### 3.1.7.3 TRAINING AND DEVELOPMENT OF ENTREPRENEURSHIP

Formerly entrepreneurial is considered in born talent and sharpen through direct experience in the field. The paradigm has shifted. Today, entrepreneurship has become a discipline of values, abilities and behavior in the face of life's challenges with the opportunity to gain a variety of risks that may be countered.

The design of a good entrepreneurship training program is to create SUPERIOR CHARACTER that will giving a tremendous positive impact, even if the participants do not become entrepreneurs<sup>2</sup>.

From this training it is expected, that the Dayak community are encouraged to increase their ability to become local entrepreneurs. The existence of some local entrepreneurs will facilitate community empowerment since various initiatives will be awakened and enforced. In addition, they themselves will seek marketing for local products.

<sup>2</sup> Presentasi Dr. Ir. Biakman Irbansyah, MBA. Rektor Universitas Wiraswasta Indonesia (Indonesia Entrepreneur University) pada tanggal 17 September 2014 saat Workshop Perancangan Pelatihan Pemberdayaan Masyarakat Daerah Penyangga Kawasan Konservasi 16-18 September 2014 di Hotel Salak, Bogor.

### 3.1.7.4 TRAINING-RELATED ENHANCEMENT OF UNDERSTANDING AND CONCERN FOR THE CONSERVATION SUCH AS CONSERVATION CAMPAIGN

Rare Indonesia has a master degree program in Bogor Agricultural University in the field of environmental campaigns that give graduates the ability to develop and executes wide range of programs to increase people's pride to their own natural resources. We recommend a minimum of 1 (one) youngster to be given scholarships to pursue the program where the funds can come from ITTO, WWF Indonesia, local government and other institutions that are not bound.

### 3.1.7.5 TRAINING ON INSTITUTIONAL STRENGTHENING

To strengthen local institutions, including customary institutions, it is necessary to conduct training related to institutional strengthening such as institutional administration and financial training, leadership training and others. Similarly, motivational training needs to be done on a regular basis, to keep the high motivation level of local community so they would endlessly have spirit to develop various economic activities in the region.

### 3.1.7.6 TRAINING RELATED TO WILDLIFE CONFLICT

Local people, including Sadap sub village inhabitants, still carry out traditional hunting to meet their needs of protein. Animals hunted include wild boar and deer. They also capture the long-tailed macaques that interfere with their fields. The monkeys were killed, and some of them are eaten.

Training to tackle wildlife conflict that attacks the farm fields should be organized to reduce losses on both sides.

## 3.2 Lesson Learned

From discussions with resource persons, community development activities carried out by BKNP are unsuccessful most likely caused by several things, namely:

### 3.2.1 The Lack of Assistance Provided by BKNP

After receiving social assistance, local community groups carry out their own activities, with minimal assistance by the national park. The park can not provide assistants, due to their limited number of employees. The national park itself need more people to perform basic tasks of park management. Therefore, it is not surprising that in park evaluation report, for the unsucceed community development activity, the local people use a reason for being too busy working on farmland as the park authority has no idea what is the reality.

Recommendations:

To overcome these problems, we propose that in any community development activities, they must be followed by a mentoring program for at least two (2) years. This meant that the officer/counselor can help to overcome any technical problems faced by the community during the activity's implementation, as well as to seek resources and other resources that suddenly needed, and remind people on their commitment to carry out the activities. This is necessary because based on park's evaluation, several community development activities are failed to be carried out as people said they are too busy working in their farmland.

### 3.2.2 New Activities Offered to the Community

Raising chicken broilers are new to the community. Though the idea of raising broilers submitted by the community itself, considering the demand of poultry and fried chicken on the market. After realizing that raising chicken is expensive and should be intensive, all of 100 chickens given by the park were then reported died due to plague. Similar thing happened in Bengkulu province.

In Takang Kebun village, Seluma Regency, Bengkulu Province, facilitated by provincial conservation office, local community asked

mushroom farming since they regularly picking mushrooms in the forest. By having mushroom cultivation, they thought they would get mushroom more and easier. In fact, mushroom cultivation requires specific treatment such as sterilized conditions for making the mushroom uncontaminated. After going through a variety of training, they felt the difficulty of mushroom cultivation. Now, mushroom house and the entire media fungus are neglected, and even become a place for accumulating garbage.

Now the ladies are picking mushrooms back in the forest that are easier than mushrooms cultivation. The same thing also happened on the island Sebesi, Mount Krakatoa Sanctuary. The ladies asked for a training for embroidering tapis fabric, because the embroidered fabric price is indeed very promising. Training is given, the store to sell the product have also been provided, but the program failed. This because the community is Sebesi island are fishing communities that are impatient to do embroidering.

Recommendations:

1. Knowledge of the community character. In community development program, the officer responsible to implement the activity, should know and understand the character of the people who receive the program so that the assistance provided will run well and have a positive impact. For example, the Dayak Iban society is a society of 'hunter and gatherer', they do not like to be too busy with the time-consuming activity. They like practical activities, that do not require too much of their time, easy to implement, and can provide considerable economic results.
2. Crop/livestock that have already been known by the public. The crop/livestock that will be developed in community development programs should be the one known by the public, either way its caring as well as access to the market for sale. For example, a program of planting vegetables in

villages Labian Iraang is successful because the villagers are used to grow vegetables and fruits in their garden.

3. Prepare the calculation of the economic benefit of the program. When offering community development programs, one should have prepared the figures of economic benefit that illustrate the results after implementing the activities. While we talk to the local people, they often mention about the profit or the possible amount of money that can be generated from a particular activity. Telibay – a community leader - explained that she and the longhouse inhabitants refused forest development programs offered by GIZ, because she has no clear picture about the amount of revenue people can receive from the program.

### 3.2.3 Lack of Access to Markets

Some community development activities carried out by national parks, such as fish farming was successful, but at the time of harvesting, there was no access to the market in other locations, while local consumption is saturated and can no longer absorb the production.

Recommendations:

To deal with this we suggest the following things:

1. *Build a commercial institution (koperasi).* Parties implementing community development, national parks, eg. NGO's, should create commercial organizations that can hold and sell agricultural products produced by the community, in the form of cooperatives or CV (limited company). This institution is responsible for finding markets and opening stores/shop in certain locations to sell agricultural production/crafts produced by the community. This institution should not monopolize even it should encourage the establishment of similar institutions by the people, to make

them independent. For example, all the way from Mataso towards Badau we do not see stalls selling fresh fruits, while fruits such as durian, mangosteen, Duku, Landsat, rambutan scattered in the forest. While entering Lubuk Antu, there are many small stalls selling fruits.

2. *Product diversification.* Officers from national park or NGOs responsible for implementing community development, should looking for alternatives of product diversification that durable and has a good market. For example, rambutan and jackfruit are found in the woods and being ignored. These fruits can be processed into dried fruits, such as those sold in Malang, East Java, or candied as in many areas in West Java. Similarly, sugar palm fruit not used by the local community, are favorite for the Javanese palm oil plantation workers in Badau.

## 3.3 Recommended Non Forest Timber Product

The types of NTFPs plants that can be developed in the buffer zone development program are:

### 3.3.1 Tengkawang Trees

Tengkawang tree - dipterocarp family – is a tree species that ecologically are in accordance with most parts of Indonesia, especially in Kalimantan, which has peat soils. The tree is considered commercial because its oil can be used as ingredients of cosmetics manufacture. The problem with the family is that the fruit can be produced only every 4 years, even there is one within 13 years. The seed is recalcitrant, which means that the seeds can not be stored in long period of time (Yasman Smith and Smith, 1986)<sup>3</sup>.

<sup>3</sup> Paramita, Aldila. 2008. Pengaruh berbagai media terhadap perakaran stek pucuk 3 jenis tengkawang di PT Inhutani II Kalimantan Barat. Skripsi. Fakultas Kehutanan, Universitas Gajah Mada.

Planting these trees on public lands or forest production is expected to provide a more orderly seed stock. Provision of tengkawang tree seedlings can be done through the cuttings mechanism. Cutting mechanism is an attempt to obtain a new individual tree by growing a piece of branch or twig shoots of plants in a particular medium so that it can be an individual plant. Inhutani II in West Kalimantan has facilitated research of this tengkawang cuttings. One of them by Miss. Aldila Paramita - currently serving in the Directorate Forest Conservation (KKBHL), Directorate General of Forest Protection and Nature Conservation (PHKA) - about the use of different media to shoot cuttings of tengkawang. Inhutani II is expected to be involved in the development of nurseries for the development of this tengkawang tree.

### 3.3.2 Sungkai Tree

Sungkai wood (*Peronema canescens*) has economic value used for buildings, furniture, flooring, wallboard, sculptures, carvings, crafts and fancy finir. Besides, the leaves can be used as medicine for dental disease and to reduce fever. These are the factors that encourage the development of this type. This species can be grown in intercropping or complongansystems.

As explained earlier, we encountered Sungkai tree in many places, in the farmland, production forest, even in the area at Putussibau city center. For community development, Sungkai wood can be used for the manufacture of pencils.

### 3.3.3 Palm Trees (*Arenga pinnata*)

Palm trees can be used, either as conservation function, as well as production function that produces a range of commodities that have economic value<sup>4</sup>.

#### 3.3.3.1 CONSERVATION FUNCTION

Palm trees with shallow and wide roots will be very beneficial to prevent soil erosion. Similarly, with a fairly dense leaves and stems covered with

a layer of fibers, will be very effective to hold rainwater. Besides, the palm trees that grow well in the cliffs, would be very good as landslide erosion control trees.

#### 3.3.3.2 PRODUCTION FUNCTION

The production function of a palm tree start from the roots, stems, leaves, flowers and fruit. In Java palm roots are used for a variety of Traditional Medicine (Heyne, 1927; Dongen, 1913 in Burkil 1935). Fresh roots can produce a wine that can be used as a medicine for curing constipation, dysentery and lung disease.

Its hard stems are used as for household appliances and some are used as building materials. The inner part of the stem can produce sago as a carbohydrate source used as a raw material for making bread, glass noodles, noodles and mix manufacture of glue (Miller, 1964). While the tip of young stems (umbut) - tastes sweet - can be used as vegetable (Burkil, 1935).

Young leaves, the veins and leaf sheath, can also be used for cigarette packages, a broom stick and a bottle cap as a substitute for cork. The cut of flower stalks will produce a liquid containing sugars and can be processed into palm sugar or palm wine (Steenis et al, 1975). The fruit can be processed into foods like 'kolang-kaling' that are widely used to mix the ice drink, sweet coconut soup (kolak) and sweetened kolang-kaling.

#### 3.3.4 Gaharu Tree (*Aquilaria malaccensis*)

In 1994, CITES convention (Convention on International Trade in Endangered Species) in the United States determined that the gaharu tree species (*A. malaccensis*) was put into Appendix II, which is a plant that is restrictedly trading. Such determination due to the reduce of gaharu population in the wild since the collector can not identify exactly which plants that already or not ready for harvest. To search for gaharu-producing trees, the collectors cut down dozens of wrong trees that do not produce gaharu, so that the number of these trees is greatly reduced.

<sup>4</sup> <http://arenindonesia.wordpress.com/budidaya-aren/>

In 2004, Indonesia proposed that all natural gaharu-production from the genus of *Aquilaria* and *Gyrinops* are included in Appendix 2 to restrict its trade so that the trade of gaharu must have permission from CITES and within certain quotas. This is done to ensure natural gaharu tree species can grow and spread well<sup>5</sup>.

According to the Chairman of the Indonesian Gaharu Association - Mashur Elias – there are gaharu wood in Indonesia grown in Kalimantan and Papua, West Sundas Lesser, Celebes, and East Sundas Lesser, the best and the biggest market demand is gaharu from North Borneo. So far, gaharu planting has been implemented by the park with fairly good rate of growth.

### 3.3.5 Bamban (*Donax canniformis*)

Bemban or bamban (*Donax canniformis*) is a kind of herb that produces wicker fiber material. Bemban often found growing wild along the edges of water or in wet places; also in bamboo forests. The leaves are used as medicine for ulcers, deflated swelling, and fluid to the eye drops. Discharge from the stems of young Bemban used to cure snake bites<sup>6</sup>.

The Dayak using fiber from Bemban trees as the basic material to make webbing/mats. This type of tree is now difficult to find, therefore to support ecotourism programs through the sale of locally made products to foreign tourist, rejuvenation and replanting of Bemban is necessary to meet the need of basic material of different types of webbing. Before planting, it is important first to map the locations of suitable habitat for Bemban trees, since these trees require certain conditions as a place of growth (stagnant region but with running water).

### 3.3.6 Bamboo

Taken from PRESS RELEASE No. S.286/II/PIK-1/2007 Ministry of Forestry concerning Inbar and Ministry of Forestry cooperation on

bamboo development, described the benefits of bamboo economically and ecologically, among others, when compared to commodity wood, bamboo plants are able to provide an increase in people's income around the forest in a relatively fast, namely 4-5 years. Other economic benefits are marketing products for both raw bamboo as a substitute for wood and finished products which include chopsticks, craft items (furniture), flooring, ceiling are still very much open to meet domestic and export needs. In terms of ecological, bamboo plants have the ability to maintain environmental balance because root system prevents erosion and regulate the water system and can be grown on marginal land.

If these products are quite successful, it is needed to rejuvenate bamboo stock regularly. FORDA has been working with the International Network for Bamboo and Rattan (Inbar) and the Indonesian government, represented by the Ministry of Forestry in developing collaboration to develop bamboo products. A Memorandum of Understanding (MoU) - a document of a cooperation agreement between Inbar with the Directorate General of Land Rehabilitation and Social Forestry (RLPS) - was signed on Wednesday, June 13<sup>th</sup>, 2007 in Jakarta.

The initial phase of the MOU activities will be focused on building models of earthquake-resistant bamboo houses in Bantul, Yogyakarta with relatively low cost. Next, stage activities will cover a wider field, among others, institutional capacity building, applied research and development of bamboo resources, exchange of experts, technology transfer, and training areas of cultivation, management, and processing of bamboo.

International Network for Bamboo and Rattan (Inbar) is an international organization that is engaged in the development of bamboo and rattan commodities established in 1997. The initiator of the organization is Indonesia, together with other bamboo and rattan producers countries including China, India, Canada, Philippines, Bangladesh, Myanmar, Nepal, Peru, and Tanzania.

<sup>5</sup> <http://id.wikipedia.org/wiki/Gaharu>

<sup>6</sup> <http://id.wikipedia.org/wiki/Bemban>

### 3.3.7 Coffee/Cocoa

In the market in Putussibau we found a stall selling coffee with coffee beans purchased from Pontianak city. The park has distributed coffee seedlings to the people in Banua Ujung village Continent for community empowerment programs. Unfortunately the program was not accompanied by training for seedling maintenance and coffee production process. Similarly, cocoa, looks neglected because people do not understand how to process the cocoa beans. Therefore it is very necessary to develop training on planting, maintenance and process coffee beans / chocolate.

### 3.3.8 Pepper (*Piper albi* Linn)

Pepper is a plant rich in chemical content, such as pepper oil, fatty oil, also starch. This plant is one of the world trading commodities and more than 80% of the Indonesian pepper exported to foreign countries. Communities in the Kapuas Hulu are familiar with this plant for trade to Sarawak. Training for manufacture and maintenance of pepper cuttings is necessary because this product has a pretty good price. West Kalimantan province pepper production has declined from some 4620 tons in 2009 to 3547 tons in 2013. Pepper prices itself range from 80 thousand to 200 thousand rupiah per kilo. In fact, if managed intensively pepper plants in farmland area of 0.25 ha can raise 115 million rupiah.

Betung Kerihun NP in collaboration with WWF-Indonesia, should then determine the priority of the types of NTFPs to be developed, tailored to the capabilities of human resources, technology and the available budget. Where possible priority NTFPs selected determined by region / watershed.

## 3.4 Agriculture and Animal Husbandry

The following items are some of the commodities that may be developed in agriculture and animal husbandry:

### 3.4.1 Vegetables

Various types of vegetable crops currently being developed in Labian Iraang Village. The program went well because in our observations, people are accustomed to planting vegetables in their yard. As mentioned earlier, there is a need to map areas of seasonally flooded because this region provides a good place to grow vegetables.

Problems on vegetable planting program is the sales mechanism. In Badau Market, the vendors buy vegetables from Sarawak because its freshness guarantee. Therefore the community development program of planting vegetables, in addition to consider soil fertility, it also important to take into consideration the sales mechanism that keep the freshness of vegetables when received by the seller, for example, through the mechanism of using plastic or sold during the night.

### 3.4.2 Rice

As explained previously, in the field of Agriculture, the development of local rice - brown rice, black rice and Seluwang rice - have been conducted in Malapi village, South Putusibau. In the village there is a good farmer group called Sio Kereng Makmur. The development of this rice using organic fertilizer with direct guidance from the Regency Department of Agriculture. In collaboration with the Department of Agriculture, the park authority can develop these kind of rice in the villages located in the buffer zone areas.

### 3.4.3 Cattle

As explained earlier, the implementation of the feedlot going pretty well since 2008, because of the availability of natural forage such as grass

and leaves. For each village, cattle can also be combined with biogas development to meet the needs of household for cooking and electricity needs. According to our records, maintaining two (2) cows will be able to meet the energy needs of a family for life.

#### 3.4.4 Pigs

Pig-sharing program to the community by park authority looks pretty good. Pigs distributed are too little aged about one year due to budgetary constraints. These pigs are used only to meet the needs of meat during certain traditional ceremonies such as the death or marriage. As for the daily needs, people are still trapping pigs in the forest. If the pig breeding program intended to meet the needs of people's daily meat, the pigs distributed should be a pair of parent that can produce piglets for later nurtured and raised. Maintenance of these pigs can be rotated, as goats on the Island of Java.

#### 3.4.5 Roosters

During traditional of ceremonies, Dayak people often held a "cockfight" and the value of money at stake is quite high (can reach 10 million dollars). Therefore, roosters have quite high economical value.

### 3.5 Development of Ecotourism

Sarawak itself is a fairly well-known tourist destination in the world that able to attract 1.5 million to 2 million tourists per year (Kompas, 2011). It is expected that tourism industry in Kapuas Hulu utilizing Betung Kerihun and Sentarum Lake national parks, can attract 10 to 20 percent of that number. Unfortunately, there is no 'visa on arrival' facilities in Kapuas Hulu. Though the trip from Kuching to Putussibau can be reached by land for about 9-10 hours by car. While traveling overland from Lanjak Entimau Wildlife Reserve, Sarawak to Mataso,

the entrance point of Betung Kerihun, it only takes about 4 hours by car.

The Community Tourism of Kapuas Hulu (KOMPAKH) which assist the development of ecotourism in Betung Kerihun by involving local communities, need to be strengthened by creating more detailed ecotourism programs (narrative, time, activity and location) and targeted for tourists both local and foreign tourists.

Type of tourism potential to be developed there are:

#### 3.5.1 Natural Tourism

1. Rafting with pristine natural condition.
2. Fishing (fishing mania). Preferably the used hookis made of 'carbon' that can be destroyed in a few days without hurting the fish's mouth when they are released back into the river.
3. Jungle adventure. The forest area around the longhouse of Sadap village, normally used to take the tourists to the location of the waterfall nearby (3 hours walking). Along the way tourist get an explanation of tree species used by the community for fresh vegetables, soap, traditional medicines, fruits and orangutan food. Pathways need to be developed with interpretation material of traditional knowledge of the society. The forest is currently maintained by the local community because there is a spring in it which also the source of clean water for drinking and cooking of Sadap community.

#### 3.5.2 Cultural Tourism/Religious

##### 3.5.2.1 SACRED PLACES

As mentioned earlier, not far from the longhouse of Sadap sub-village there is a sacred point used as Gawai ceremony location. Therefore, it is necessary to inventory of dayak's sacred sites. The stories of the people associated with these sacred sites should also be developed.

### 3.5.2.2 GAWAI RITUAL

Every year on June 2nd, the Dayak Iban held Gawai ritual with the aim to invoke the blessings of the ancestors for a better farm harvest in the coming year. Gawai Dayak is a celebration held in West Kalimantan and Sarawak by the native tribes of West Kalimantan and Sarawak, especially the Iban and Dayak Darat. Gawai Dayak is a harvesting celebration that start massively to be held since September 25, 1964, and intended as an official day of celebration. Malaysian state acknowledged the ritual on June 1, 1965.

Gawai Dayak has several ceremonies that run in the city and the long house. Various food offerings are presented to the rice god for a better harvest in the coming year. Poets will read a special spell for this ceremony and blood of cock will be smeared on the material offerings.

After this ceremony, Gawai Dayak celebration will begin officially. A big trunk recognized as 'ranyai' will be set up in the middle of the room and decorated with food and drinks. They will also be visiting family and friends are referred to as 'Ngabang'. Traditional clothing will be worn, and the pit of the bead jewelry will be issued for use on that day. Virgin Iban will also wear a traditional silver jewelery. Gawai Dayak ritual will be closed and ended with a decrease in the ranyai. Settings as well as better marketing is needed to develop cultural tourism (source wikipedia.org).

### 3.5.2.3 PAMELO BEO RITUAL

PAMOLE BEO, is a time of celebration in the end the activity or a planting time (within one year), which is marked by the ceremonial "Kalangkang-making" that is equipped with a variety of offerings, such as: leaf Sakala, sticky suman, Kalame meat, bao/ salae scales/ smokefish, belida/barira freshfish, Danum Baram drinks in a mortar of Bulo ririas. The ceremony was celebrated by the Dayak Tamambaloh tribe.

Kalangkang is a wooden box made of LITA/ Pelai wood that is crafted and drawn exclusively with traditional ceremonies, which is then used as a place for serving food, beverages, cigarettes and betel etc. to the spirits of the ancestors.

### 3.5.2.4 ART OF ICONOGRAPHY OF DAYAK

#### TAMAMBALOH

The Dayak Tamambaloh hereditary inhabit the upper section of Embaloh River. The specificity of Tamambaloh community compared to other tribes could be known through its cultural treasures trinkets. One of the peculiarities of indigenous culture is the Art of iconography of Tamambaloh.

Although for personal gain it is associated with the manufacture of coffins, longhouse, iconographic art is still alive. It is heavily influenced by the original belief by public that entitled Tamambaloh makes carving iconographic are only special people through rites and certain rules. This original view was recognized by some of the artists iconography as a barrier of creativity of the artists.

However, this situation began to change in the era of the 1960s, when the Catholic Church strongly supports the use of iconographic art as interior design of the building of the Church, Chapel, and other spiritual infrastructure. In Embaloh Hulu District, the development of Karawitan art was driven by Hoogland, a Dutch missionary. He began collecting the iconography artist to paint icons in several buildings belonging to the Parish of St. Martin's Catholic Church such as the Church, the Hospital, the residence of the religious men and women, multi-purpose building, etc. Moral support and a high appreciation of the heritage of the Catholic Church against the Dayak Tamambaloh greatly promote the development of Art Iconography Banuaka Tamambaloh later on.

### 3.5.3 The Development of Dayak Traditional Products

#### 3.5.3.1 THE MAKING OF TENKAWANG OIL

In the past, the Dayak Iban community used the oil from tengkawang seed for frying foodstuffs. Currently, tengkawang oil is used for products that are more varied. The process of extracting oil from tengkawang seeds by involving tourist is ecotourism activities that can be developed at the village level.

#### 3.5.3.2 HANDICRAFTS

1. The weaving mats and baskets. Mats and baskets are daily necessities used Dayak community to cushion and store / carry a wide variety of agricultural products. Visitors can be invited to join together to weave mats and baskets.
2. Weaving. Almost every middle-aged women in the Dayak community are weaving during their spare time.
3. Craft of beads. By the time the parents weave, young women make a variety of jewelry and accessories made from beads.

### 3.6 Recommendations of Locations for Community Development Project

Several sites visited by the team of consultants while doing observations during field trips are:

1. Sadap sub-village: longhouse and farm field
2. Labian Iraang village: pig distribution and vegetable farming
3. Banua Martinus village: cow fattened
4. Banua Ujung village: coffee seedlings
5. Tanjung Kerja village: ex-fish pond
6. Suwai village: guest greeting at the longhouse
7. KPH Kabupaten Kapuas Hulu office: discussion with GIZ team

The team of consultants also visited several markets, namely in Putusibau, Badau and Langkat.

Recognizing the limited time available during field visits and limited in-depth knowledge of the Team of Consultant concerning villages surrounding Betung Kerihun NP, recommended locations for the implementation of community development activities in this report are non-binding nature. This means that the implementer of community development activities eg. Betung Kerihun National Park, WWF-Indonesia or other parties, may carry out community development activities in other locations considered to be more adequate.

As explained in previous chapters, recommended types of NTFPs are Shorea trees producing tengkawang seeds, Sungkai wood, palm trees, gaharu, Bemban, bamboo, coffee/chocolate, and pepper. So far Tengkawang seed are collected by people from the secondary forest areas abandoned by HPH (Forest Concession). The national park has been distributing gaharu trees to be planted in the farm fields and according to the national park evaluation reports, the trees are growing well. Palm trees are growing everywhere in farm fields and forests around the villages and the local community utilize the tree's sap for processing into alcohol. Similarly Sungkai trees can be found anywhere in farm fields, even in the middle of Putusibau city. Where Bamboos are growing along the river.

Bemban trees specifically require certain conditions to grow which is a stable inundated location. Coffee/chocolate trees have already been planted by the community but the final products not processed because their lack of processing knowledge. For pepper, Langkat District has already producing pepper for saletto Sarawak. Various kinds of fruit trees grow in the area of secondary forests and fields around the villages.

Another recommendation from the team of consultants are technology development to optimize the final product of NTFPs which are technology to accelerate plant growth, agricultural products storage technology, technological

diversification of agricultural products/NTFPs, refining technology, technology to maintaining soil fertility due to intensive use of farm fields, biogas technology, and technology of compost/organic fertilizer/liquid fertilizer.

Several locations recommended by the team of consultants are:

### 3.6.1 Sadap Sub-Village

Sadap sub-village is one of the tourists' entrances to visit Betung Kerihun NP. This condition should be optimally utilized to develop Sadap village as the window of information of Betung Kerihun NP and of public participation to support the management of national parks.

Activities recommended to be implemented are:

1. Bamboo and Bemban trees can be planted at several locations along the Embaloh river adjacent to Sadap sub-village. The planting sites can also be tourist destinations as the tourists can be involved in planting and harvesting the Bemba and bamboo trees.
2. The development of 'workshop' for the application of technology to optimize NTFP final products adjacent to the resort office at Sadap sub-village, such as:
  - a. Refinery to process tengkawang seeds into tengkawang oil
  - b. Tools for processing the sap water of palm trees to become liquid sugar and sugar ant
  - c. Tools for processing sago from sago trees
  - d. Tools for making 'dodol' made from various local fruits such as papaya, durian, etc.
  - e. Tool for making and packing (vacuum) chips from various fruits such as rambutan and jackfruit, and packing boiled bamboo shoots.
  - f. Location to make compost.

The workshop can also be used as a tourist attraction for tourists visiting the sub-village, especially if they are also invited to

participate in assisting the manufacture of the final products.

3. Various training required for the application of technology to optimize NTFP final products can be done in the Offices of the Region I Division of Betung Kerihun NP in Mataso. While the field work can be done in Sadap sub-village/Workshop of BKNP Resort Office and or other villages.
4. The main problem faced by Sadap sub-village is no electricity for lighting. Mini-hydro development by using the river flows was attempted by GIZ. Currently the mini-hydropower turbines are falling apart hit by the flood flows. According to local people, during the last 3 years, there has been no intention to repair the engine of the project that cost up to several hundred million rupiah. Instead, GIZ provides a small generator where its gasoline is purchased jointly by the occupants of the longhouse. On the other hand, currently in the UK, there are public buses that use biogas from human feces. Therefore, the construction of biogas infrastructure by using the raw materials of feces from the longhouse occupants (approximately 200 people from 40 families) need to be considered. In addition, besides for lighting purposes by using gas lamps, longhouse communities can also use the generated biogas for cooking purposes, because each family has a gas stove for cooking the daily meals.

### 3.6.2 Labian Iraang Village

The village is situated on the banks of the Embaloh River where the vegetable planting site is an area that is regularly flooded. Sediment carried by the river make the land fertile enough to plant vegetables. Efforts to plant vegetable should be continued but coupled with the development of 'workshops' for packing the vegetables for not withering, and the manufacture and packing of fruit crisps.

Planting vegetables can be done in other villages which also have an area flooded periodically. Similar to Sadap sub-village, lack of electricity for lighting is also the major problem faced by this village. Infrastructure of biogas by using human waste materials can also be developed, in addition to lighting purposes, the biogas produced can also be used for cooking.

### 3.6.3 Banua Martinus and Sibau Hilir Villages

In Banua Martinus village, there is a location where 31 cows are kept for fattening. Technique of cow fattening is simple by letting the cattle round off in a fenced area of +/- 5 ha. Periodic monitoring of cow health condition has been carried out by the local Animal Husbandry Department, so the cows look pretty healthy and fat.

At this location an infrastructure to produce biogas from cows' manure can be built. The biogas produced can be distributed to the surrounding houses. Residues of biogas process from the manure, besides for sale, can be used by the local farmers as fertilizer at the coffee nursery in the Banua Ujung village.

Most of the people in the Sibau Hilir village also raise cattle. Construction of the facility to produce biogas can also be placed in the village. Since its location is adjacent to Putusibau, the cows manure produced can be used to support the local Department of Agriculture program to develop an organic farm of Seluang Rice.

Along the road to this village, there are rubber plantations managed traditionally for both its maintenance and processing. Through good training programs, the maintenance of the plantation, the wire tapping techniques and sap processing could be better so that the expected result of this natural rubber production will be improved in quality and quantity.

### 3.6.4 The Office of Section II of BKPN in Tanjung Kerja

Office of the Section II of BKPN in Tanjung Kerja has a fairly extensive backyard that can be used as pepper tree planting demonstration plots. Not too far from the office, there is located the ex-fish rearing pond. Former fish ponds are now dry and the fish rearing program does not continue. It is recommended that the ponds could be used again for rearing the fresh water fish, but with better marketing and sustainable programs.

At the office a workshop can also be built to locate the tools of:

1. Manufacture of wooden pencil from Sungkai tree growing in the farm fields of local community
2. Manufacture of bamboo chopsticks
3. Making and packing fried mushrooms
4. Making 'dodol' made from various local fruits such as papaya, durian, etc.

The office location in Tanjung Kerja is not far away from the Capital of Langkat District and the City of Badau. This is good enough to be the location of the collection and marketing of a wide range of NTFPs produced by other villages.

### 3.6.5 FMU Kapuas Hulu is Managed by an Equivalent of an Echelon 3 in the Government Structural Level

Currently FMU managers are still looking for an appropriate form of cooperation with the community for forest management. Shorea tree planting producing tengkawang seeds, in collaboration with INHUTAN III, can be implemented in this region. Including planting Sungkai trees, gaharu and palm trees.

## 3.7 Monitoring and Evaluation

To determine the progress of the community development project to be provided, it should be monitored periodically so that a monitoring team involving various parties should be established,

including the donor, local government, community leaders, traditional chief, as well as other relevant agencies.

Monitoring and evaluation by the team should be performed at minimum every 3 months for the field of the development of technical mastery, the development of increased yield (production, efficiency, etc.), the development of income (income per capita) and the development of family welfare in general.

Some indicators of the success community development that can be used are as follows:

### **3.7.1 Increased Revenue of the Target Group Members**

There is an increase in people's income derived from the sale of NTFPs final product. For example, the farmers group trained to produce souvenirs can get benefit of 800 thousand rupiah each month from selling the souvenirs.

### **3.7.2 The Opening of Business, Employment and Markets Opportunities for the Community**

The final products of NTFP from community development activities, such as sugar ants, fruit chips, and others, will be sold either in the Kapuas Hulu regency, and if possible, sold to other regencies. This gives local people the opportunity for developing businesses, as well as employment opportunities. It is the task of the implementors of community development activities to ensure the quality of the final product, in order to maintain the market demand. Increased expertise of the communities, will also allow them to get new jobs. For example, the training of automotive engines will give trainees the opportunity to get a job in motor vehicle workshops.

### **3.7.3 People Know the Boundary of the National Park**

In Kalimantan region, tenure issue is a major problem faced by many park managers.

A successful community development activity will develop mutual relationship based on respects between local communities and the national park authority. One of the evidences is the recognition of local communities towards the boundary of the national park.

### **3.7.4 People Understand the Benefits and the Functions of a Conservation Area**

In addition to acknowledging the boundary of the national park, a successful community development will lead the people to know and understand the benefits and the functions of a conservation area. For example, the basic understanding of the benefits of the existence conservation area is providing clean water for drinking and as a location for nature tourism. This understanding will hopefully encourage people not to encroach and to disturb the national park.

### **3.7.5 Increased Community Participation in National Park Management**

This could be seen from local community's participation in various activities of the management of national parks, such as forest patrols, informen related to park's security, survey of natural resources, nature tourism activities, and others. In addition, park managers should conduct regular meetings with community representatives to discuss issues related to the management of the park. The meeting can also be used to observe if there are any changes in public support for the management of national parks.

Monitoring and evaluation method used are;

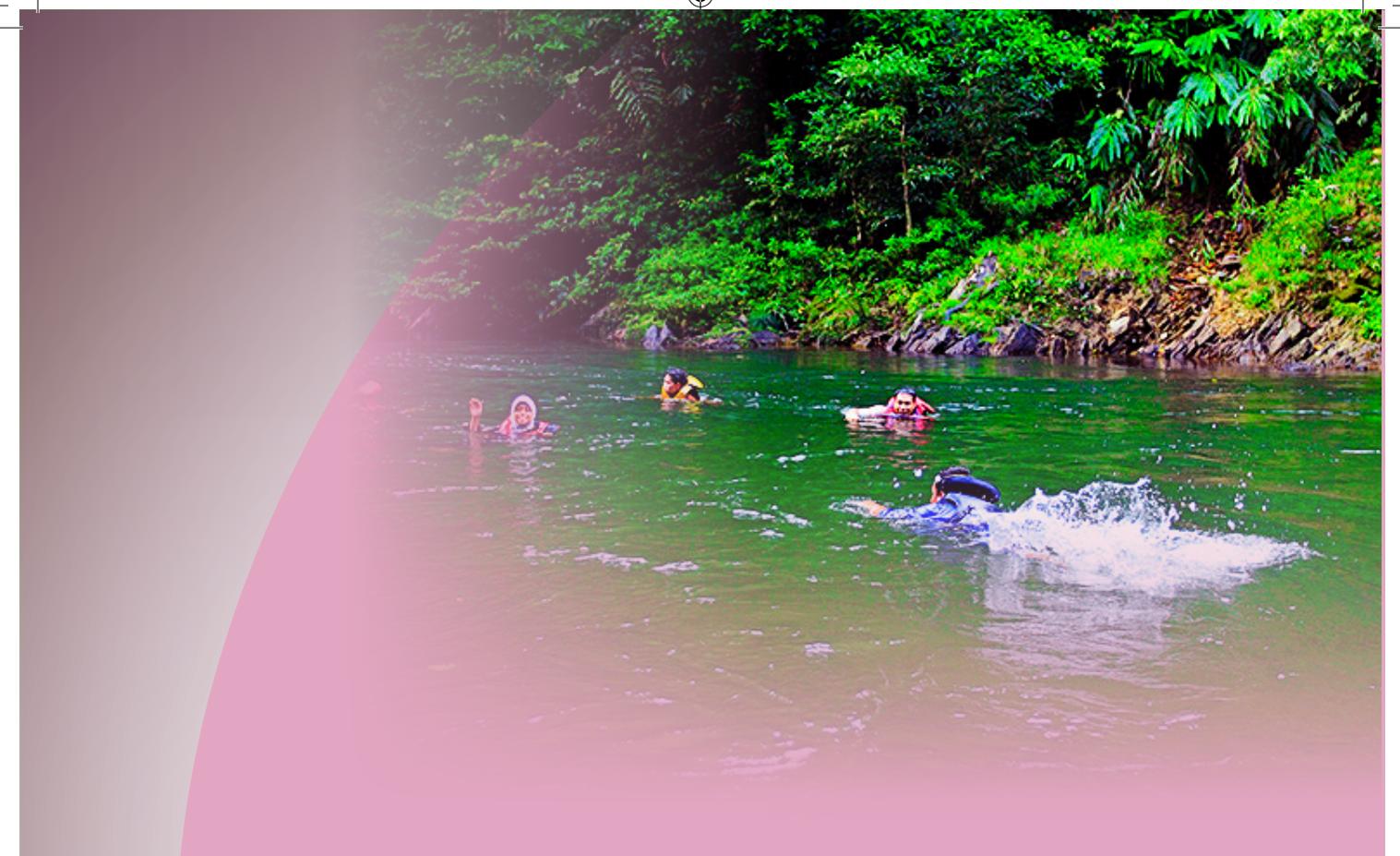
1. The collection of primary data from direct observation, interviews, and filling the questionnaire. To measure the development of the public's understanding upon the benefits and functions of the national park, preferably by using a questionnaire

survey conducted before and after the implementation of the activities. The results of the initial survey and the final survey are then compared to determine the changes development of people's understanding before and after the activity. Attached is the sample of evaluation surveys sheet to observe the increase of public revenue

from target groups conducted by the Sub-Directorate of Bufferzone Mangement, Directorate of KKBHL, DG PHKA, Ministry of Forestry in 2014.

2. Secondary data collection from examining letters and reports as well as the file/other documents related to the implementation of community development.





**CHAPTER 4**  
**Enabling Condition**





Related to addressing hazardous incident, Wiley (2013:4) mention that an enabling condition is a condition that makes the initiating event of a scenario possible. An enabling condition is neither a failure nor a protection layer. It consists of an operation or condition that does not directly cause the scenario, but that must be present or active in order for the scenario to proceed to a loss event<sup>1</sup>.

On the other hand, in term of business investment, Gordon (2002)<sup>2</sup> explained that to facilitate investment into a country, the government embrace a broader set of policies designed to enhance the contribution of investment to economic, social and environmental welfare. This broad set of policies is called the “enabling framework”. An effective enabling environment for investment is one that allows societies to achieve higher levels of economic, social and environmental welfare. The challenge of creating an effective investment environment touches upon virtually all policy areas -- fiscal, public sector management, competition, environment, labour and so forth. Improving policy in all these areas helps countries reap the full benefits of foreign direct investment.

Furthermore, Gordon mention that an effective corporate action in support of sustainable development requires an effective enabling environment. Governments have influenced the shape of these initiatives in various ways. In particular, many have incorporated them into their regulatory and law enforcement strategies, giving rise to hybrid systems involving both public and private action.

Going down to a succeed small scale business that involves local community, considering both references above, similar situation of creating an effective enabling environment in terms of

issuing regulatory and law enforcement strategies is also a must. With an effective enabling framework developed by the government, eg. BKNP authority, ranges of initiatives to develop local economic will be encouraged. Hopefully, at the end of the day, the scenario of having a harmony relationship between conservation areas and local community’s welfare could be achieved.

#### **4.1 Policies That Need to be Taken in The Management of the National Park Betung Kerihun**

In the context of addressing the various accidents, Wiley (2013: 4) explains that enabling condition is a condition to create the initial conditions so that the scenario prepared allow to be implemented. Conditions that allow is not a failure. It is made up of activities or conditions that indirectly affect the scenario, but they should be present or active in order the scenarios can be run to overcome an event.

To optimize community development activities, there are some field conditions that need to be met by the park management:

##### **4.1.1 Application of RBM Mechanism (Resort Based Management) in the Management of National Parks**

RBM is intended that the management of the national park area is focused on the smallest unit of territory management, at the resort level. The presence of the ranger in the office of the resort is very important to show the seriousness of the management of the national park. A few things to note on the application of RBM are:

1. Strengthening the number and the functions of rangers at resort level. At the resort office all staff such as rangers, functional staff, extension workers and contracts labor are placed with a prepared working time schedule and budget beforehand.

<sup>1</sup> Wiley. 2013. Guidelines for enabling condition and conditional modifiers in layers of protection analysis. P. 4. Center of Chemical Process Safety. US.

<sup>2</sup> Gordon, Katryn. 2002. Enabling condition for enviromental sustainability: private and public roles. OECD (Organisation for Economic Co-operation and Development) Global Forum on Sustainable Development: Conference on Financing Environmental Dimension of Sustainable Development. Paris, 24-26 April 2002.

2. Completing management facilities including communication equipment, computers, motor vehicles, and the availability of electricity.

#### **4.1.2 Development Workshop Adjacent to the Resort Office**

Based on community development evaluation report carried out by the national park, the ineffectiveness of the program due to the bustling of people work in the fields. In fact, the field work by the local community does not require farmers daily presence. The high-intensity field work is required only at the stage of cleaning fields, planting and harvesting. Other than that people can do other necessary things. In the island of Java, the waiting time between planting until harvesting is used by men to seek jobs in cities. By building workshop facility adjacent to the resort office, park officers are expected to be able to oversee the resort on a regular basis and are directly involved (at least remind the deal villagers) in the execution of community development programs. Considering that the resort office location is adjacent to the Dayak Iban longhouse in Sadap sub-village, then this strategy is expected to increase communication intensity between resort officers with the local community. This means that the workshop equipment required to produce the agreed commodity are placed adjacent to the resort office and the making process is carried out jointly between the community and the park officer. For example, making 'dodol' durian, the production of honey, dried fruit production, and so on.

#### **4.1.3 The Zoning of Fishing Along the River**

Several river basin especially Embaloh are experiencing overfishing and fishing with the use of electricity. In cooperation with local governments, rivers are regulated by zoning system that determines three main areas, the

first area that the fish can be caught in a good way, the second region the fish can be caught with certain conditions, such as quotas and particular fishing pole size, the third, the area intended for fish to spawn and breed, so the fish should not be taken. The only activity that can be done is 'fishing mania' in which the fish caught are released back and used a fishing pole made of carbon that can decompose at any time, and does not hurt the fish.

#### **4.1.4 The Involvement of Community Participation Through Community Patrol**

During the last one year the Education and Training Center of Ministry of Forestry has sponsored a COMMUNITY-BASED FOREST PROTECTION TRAINING (Community Patrol) at BASIC LEVEL. This training is intended for people who live around the forest to have knowledge, skills and attitudes that can keep forests from various existed disorders. By following this course, a minimum competence of trainees to carry out forest protection can be met. After completing this training participants will be able to carry out forest protection activities in their own region.

### **4.2 Items Proposed by the Community**

From Workshop of Conservation Villages Development Model in Bromo Tengger Semeru NP, on 22-23 May 2014 in Malang, East Java, there are a few points as the results of focus group discussions among community members with national park officers that we think needs to be mentioned here, since these recommendations are proposed and recommended by the community. These recommendations should be considered by both Betung Kerihun National Park authority or other institutions that will carry out community development activities.

According to the participants, to build a harmonious conditions between communities and conservation areas, there are several necessary conditions (enabling condition) as follows:

#### **4.2.1 A Well Constructed Communications**

Harmonious conditions can only be created when a continuous and leveled communication between parties is well established. Good communication between protected area managers with stakeholder (stakeholders) is not only formally but also informally. In addition to family visits, ongoing mentoring is one way to establish communication from the bottom up or from public officials to policy makers in government agencies.

#### **4.2.2 The Immediate Benefit of the Conservation Areas**

Society needs to feel the immediate benefit of the conservation areas to help them understand the function of the area. One immediate benefit is the water source for the village and the development of nature tourism, which provide a variety of opportunities for people to earn extra income.

#### **4.2.3 Sustainable Program**

Often the community development program provided by the park is not sustainable, which seems only meet project-oriented administration. To maintain the continuity of a program, it is important to develop ongoing mentoring and regular meetings between stakeholders to discuss the progress of the program.

#### **4.2.4 Synergy Among Stake Holders**

Community empowerment program of the Park should be synergy with the program of local government to improve the welfare of local community. Should both support each other and complement each other.

#### **4.2.5 Continuous Mentoring**

In order for the community empowerment program goes well, there should be continuous and scheduled assistance, evaluation and monitoring. So the progress and problems of the program's implementation in the field can be immediately detected and acted upon.

#### **4.2.6 Exemplary from Park Officers**

Villagers consider that to create a society that supports conservation, first need the exemplary by the district officers. Sometimes, while requiring people to support the preservation of protected areas, some individual officers commit illegal logging or poaching. In the Pronojiwovillage, exemplary of the village officials is strongly emphasized to realize the law-abiding society.

#### **4.2.7 Creative and Proactive Community (Initiative and Have Achievement)**

Villagers should not only expect development programs from the park alone, but need to be creative. Society itself is supposed to be creative to come up with activities that do not exist, get help and assistance from various parties, and proactively taking the initiative to get the assistance that is available. For example, the Argosari village during the Bupati arrival, instead of fixing the roads they instead showed the damage village roads. Immediately after the visit, the Bupati provided financial assistance to villages for infrastructure development.

In addition, to get the attention and support from various parties, each village should have an accomplishment first so the village then will be able to take the attention of policy makers to provide ongoing support and guidance. For example Wonorejo village in Situbondo, after getting the award as biogas village, they get the attention and assistance of various related agencies.

In order for community development programs to be well received, the program developed should come from the village itself as a community initiative. For example, 'salak' fruit that is the hallmark of the Pronojiwo village, were initiated by the previous village chief to meet the production demands of his colleague in Sleman, Central Java. In the end, the production of 'salak' fruit are sold out in the village before they are sent to the Central Java. Similarly to local needs, it should be excavated from within the community itself.

#### **4.2.8 Bureaucratic Control of Policy Makers**

Discussion participants agreed that it is necessary to have bureaucratic control of policy makers at various levels of government agencies in determining the form of government support to the community. For example, the needs to emphasize the importance of forest conservation policy, so that in each line of the bureaucracy of the Central Government - Regional Government both have policies to provide support and assistance to any forest conservation efforts.

#### **4.2.9 Informal Gathering**

As previously described, good communication between stakeholders needs to be established through formal and informal channels. One way is through an informal gathering, such as forestry extension officers actively involved in village activities such as social gathering, mutual assistance, gathering at village coffee shop and so on.

#### **4.2.10 Recognizing the Village Potency**

Discussion participants agreed that each village has different characteristics from each other, therefore the villagers should recognize and understand the potency of their own villages, the problems encountered, and then map out possible solutions. For example Argopuro Village, which won Kalpataru as an

energy self-sufficient village, initially seen cow manure as a waste that pollute the village, in the end they realized that cow dung is potential for biogas energy.

#### **4.2.11 Monitoring and Evaluation**

Continuous monitoring and evaluation is needed to ensure that the community development program goes well and the problems that arise in every stage of its implementation in the field can be detected and resolved immediately.

#### **4.2.12 Paradigm Change (Society, Natuional Park, Local Government)**

The paradigm shift that occurred needs to be explained to the public so that people can adjust to these changes. For example, the older generation in the village knew the national park ranger as PA officer, but now it turned into PHKA. In the past national park management focused on securing the forest that exclusively carried out by the forest officials/rangers but later on it turned into security paradigm that require active community participation.

#### **4.3 Synergy With Other Institutions**

The success of community development can not be done by one party alone, but performed better by synergy between various agencies from government agencies, private sector, NGOs, local / foreign to other parties that have interest in community development programs.

In the buffer zone, there are community development programs including assistance from international agencies such as the GIZ (German)-FORCLIME and Kfw(Germany ), and WWF Indonesia Program which has been involved in various community development programs in Kapuas Hulu.

For local government agencies there are the Regency Department of Agriculture and Livestock

Office, Regency Forestry and Plantation Office and Community Empowerment and Village Management Board responsible in the field of community development and village.

For local NGOs there is SKMAD-KH (Secretariat of Public Communications of Dayak Kapuas Hulu) which have the common goal of maintaining indigenous territories and manage natural resources in a fair and sustainable way based on local wisdom and struggling for sovereignty of indigenous Dayak in the field of education, socio-cultural, economists and politics in order to achieve prosperity and justice of Dayak Kapuas Hulu. Its members consist of 12 Ketemenggungan in Kapuas Hulu<sup>3</sup>.

Several attempts that can be conducted BKNP to build synergy among institutions in community development are:

1. A workshop with invited representatives of villages that receiving community development programs. The workshop will enable them to share their experiences with fellow villagers in order to build a model of successful conservation village.
2. A workshop which can facilitate communication between the parties involved in community development programs so that the programs are complement to each other. The workshop can be followed up by establishing regular meetings between the relevant institutions. As explained earlier, the establishment of a forum or forums for communication among stakeholders that support the management of the national park area is needed. This is intended to make park managers can optimally utilize public participation not only as a partner for national park management, but also to participate in supervising park field officer behavior and measure the appropriateness of policy taken so that the effectiveness of the national parks management can be increased.
3. Facilitate communication between agencies that offer community development programs so that people can get accurate information on program development or the type of assistance that can be accessed by the public.

<sup>3</sup> [http://id.wikipedia.org/wiki/Kabupaten\\_Kapuas\\_Hulu](http://id.wikipedia.org/wiki/Kabupaten_Kapuas_Hulu)



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