Food security among the Orang Rimba in Jambi: transformation processes among contemporary Indonesian hunter-gatherers

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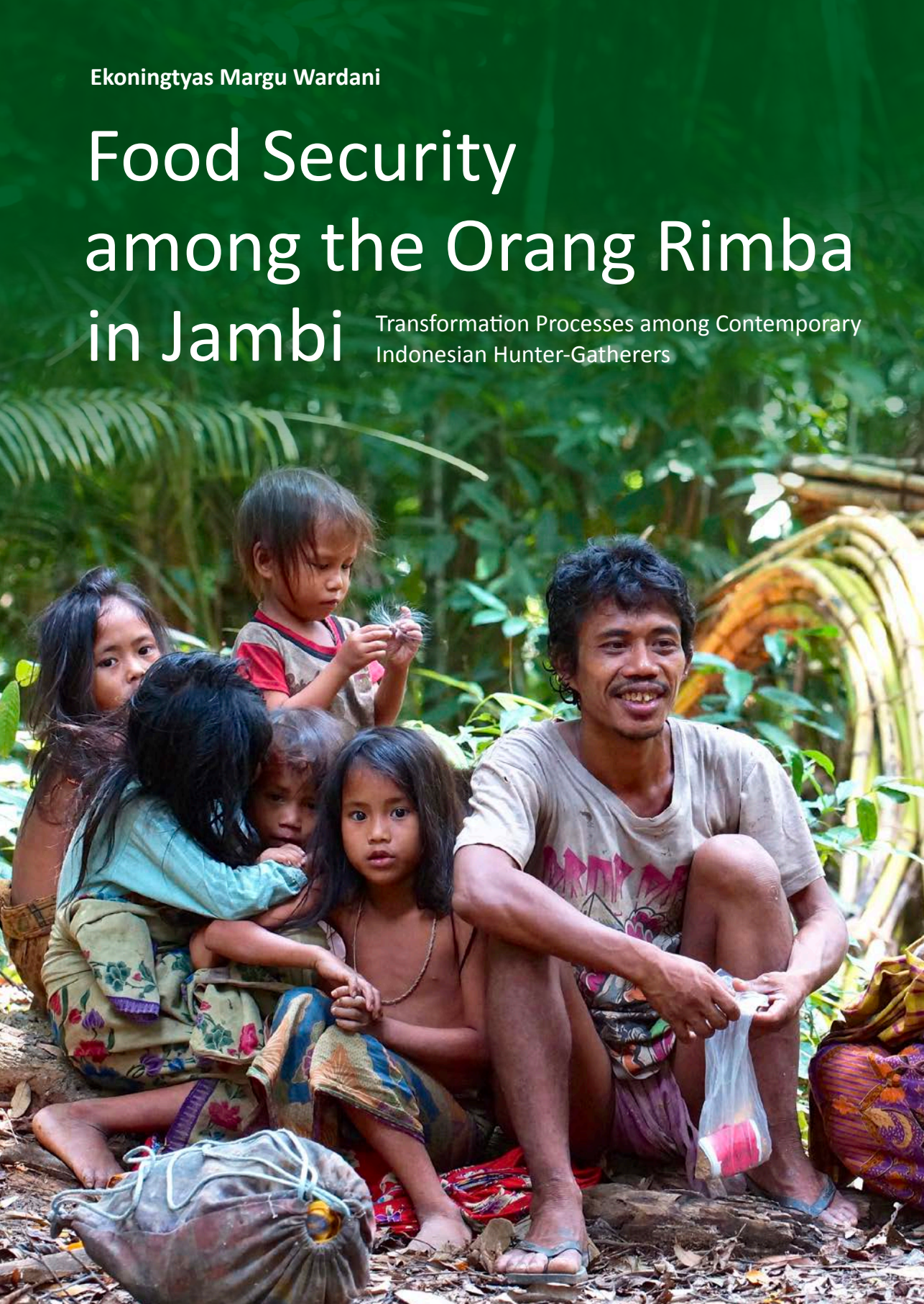

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Transformation Processes among Contemporary Indonesian Hunter-Gatherers

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To my mother and late father

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List of Abbreviations

AMAN	Aliansi Masyarakat Adat Nusantara (The Alliance of Indigenous Peoples of the Archipelago)
BBM	Bahan Bakar Minyak (fuel oil)
BPS	Badan Pusat Statistik (Statistics Indonesia)
CHAGS	Conference on Hunting and Gathering Societies
FAA	Food Availability Approach
FPIC	Free, Prior and Informed Consent
GRDP	Gross Regional Domestic Product
HPH	Hak Pengusahaan Hutan (Forest Concession Rights)
HTI	Hutan Tanaman Industri (Industrial Timber Plantation)
IFA	Industries Forest Asiatiques
IFAD	International Fund for Agricultural Development
Inhutani	Industri Hutan Negara (State Forest Industry)
Komnas HAM	Komisi Nasional Hak Asasi Manusia (The Indonesian National Commission on Human Rights)
KTP	Kartu Tanda Penduduk (Identity Card)
LIPI	Lembaga Ilmu Pengetahuan Indonesia (Indonesian Institute of Sciences)
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Product
PAD	Pendapatan Asli Daerah (Local Revenue)
Perhutani	Perusahaan Hutan Negara Indonesia (Indonesian State Forestry Company)
PMKT	Pembinaan Kesejahteraan Masyarakat Terasing
PR	Public Relations
PT	Perseroan Terbatas (Incorporated Company)
RPJMD	Rencana Pembangunan Jangka Menengah Daerah (Regional Medium-Term Development Plan)
RPTNBD	Rencana Pengelolaan Taman Nasional Bukit Duabelas (Bukit Duabelas National Park Management Plan)
RTE	Ready-to-eat
FSSP	Food Security Systems Paradigm
SPA	Satuan Pemukiman A (Settlement Unit A)
SPI	Satuan Pemukiman I (Settlement Unit I)
SPSS	Statistical Package for the Social Sciences
TNBD	Taman Nasional Bukit Duabelas (Bukit Duabelas National Park)

Glossary

In this dissertation, I use phrases, terms or words from the Orang Rimba language (BR) and from Bahasa Indonesia (BI). This glossary provides their meaning in English.

Adat	BI	custom
Akar	BI	root
Ambung	BR	traditional backpack
Anak para	BI	rubber seed
Bakon	BI	souvenir
Bedemor	BR	collecting resin
Bedewo	BR	sacred
Belanjokon sen kanti	BR	selling your money
Belukar	BR	mixed garden with ten-year yields
Bermanau	BR	collecting wild rattan
Bertalang	BI	opening and clearing the forest for agriculture and other commercial purposes
Beso Rimba	BR	the Orang Rimba language
Betina	BR	female/woman
Betong	BR	tree
Betuk	BR	cough
Betuk slemo	BR	flu
Bujang Perantau	BR	wandering bachelor
Cacar aek	BR	chickenpox
Cenenggo	BR	isolation of a sick person
Damar	BI/BR	resin
Damar hitam	BI	black resin
Damar mata kucing	BI	cat eye resin
Debalang	BR	equivalent of a police officer
Denda adat	BI/BR	custom fine
Depati	BR	prosecution and judiciary officer
Desa adat	BI	customary village
Doun	BR	the leaves
Gantung tungku	BR	hanging up the cooking stove
Gelira	BR	cholera
Gorengan	BI	fried food
Gula-gula	BI	candies
Hagom/hagop	BR	period of merriment/ecstasy and rainy season
Halom sekato Rajo, Rumah sekato Tungganai	BR	while the Orang Rimba follow the rules of the government of Indonesia, they also have their own internal autonomy and consider the leaders of their groups as their representatives

Hompongon	BR	boundary
Hubi/gadung/benor	BR	kind of tuber
Hutan desa	BI	community forestry
Ilir	BR	downstream
Indok belum	BR	a married woman without children
Inumon	BR	the forbidden forest
Jajah turun	BR	protection from the Sultan/leader
Jehot	BR	bad
Jenang	BR	middleman
Jenton	BR	man
Jernang	BR	dragon blood/daemonorops hygrophilus
Kain/koin	BR	loincloths
Kampung Kubu	BI	the Orang Rimba resettlement
Kecepek	BI/BR	handmade shotgun tool
Kedundung/kedundong/kruing/par/pulai/sialang	BR	kompassia excels
Kelumpang	BR	forest fruit
Kendawan balau	BR	organic fertilizers
Kesialon	BR	bad omen
Kesultanan	BI/BR	era of monarchy
Ketahoma melarang	BR	fruit season
Ketumenggungan	BR	area of a leader
Kolonisatie	Dutch (D)	colonialism
Kubu	BI/BR	hiding/protecting
Labi-labi	BR	freshwater turtle
Ladang	BI/BR	field
Lelabi	BR	soft turtle
Louk/sambal	BR	side dish
Malim	BR	spiritual leader
Manau	BR	rattan
Mangku	BR	justice officer
Mani rapa	BR	miracle
Masyarakat adat	BI	customary societies
Melangun	BR	mobile activities and movement to other location
Menti	BR	public relations
Meratop	BR	crying loudly
Muaron	BR	fruits garden
Nasi	BI/BR	rice
Ojek	BI/BR	motorbike rental
Pago balau	BR	organic fertilizers
Pangkal Waris	BR	Orang Rimba descendants
Pantun	BI/BR	mantra
Penghulu	BR	external manager of the Orang Rimba
Perhutani/Inhutani Perseroan Terbatas	BI	state-owned companies company
Petangungan godong	BR	fruit season

Portal	BI/BR	entrance gate
Rajo godong	BR	government officials
Rambutan	BI/BR	local fruit
Remayo/sesaro/melarang	BR	period of hardship
Rerayo	BR	elderly
Rimba bungaron	BR	multipurpose forests
Rotan	BI/BR	rattan
Rumah ditano	BR	permanent house
Rumah makan padang	BI	Minangkabau restaurant
Sanak betina	BR	blood relations from the wife's family
Masyarakat terasing	BI	isolated people
Seloka	BR	customary law
Semendo	BR	bride service period
Sentubung	BR	forest tree symbolizing the life of an individual in the Orang Rimba
Sesap	BR	garden with five-year yields
Sesudungons	BR	simple Orang Rimba house
Setali bukit	BR	forbidden forest
Setumbuk	BR	measurement of about 1.5 hectares
Sialang tree	BR	according to the Orang Rimba, it is the highest tree in the forest, referring to nest of apis dorsata fabr
Suku Anak Dalam	BI	isolated/remote customary people
Suntung naik/serah	BR	taxes
Tanah peranokon/tanah peranoan	BR	the land/the place for giving birth
Tanah tak bertuan	BI/BR	no-man's land
Tengganai	BR	customary adviser
Terbelakang	BI	backward
Tertinggal	BI	underdeveloped
Tikar	BI/BR	mat
Toke	BI/BR	middleman
Tongkat	BI/BR	stick
Tumenggung	BR	leader
Ubi kayu, ubi rambat, ubi junjung, keladi, and **tebu**	BI	tuber
Ulu	BR	upstream
Waris	BR	guardian

An Orang Rimba woman in Pengelaworon brings firewood for cooking, 2014

I Introduction

One sunny afternoon in June 2012, an Orang Rimba youth offered me a ride to Terab on his motorcycle. The drive from Bukit Suban to the eastern part of National Park Bukit Duabelas (Taman Nasional Bukit Duabelas, TNBD) took us four hours, which came on top of the previous day's six-hour car journey from Jambi City. Once I had settled in, my driver returned to Bukit Suban, leaving me with the Orang Rimba of Terab.

I spent that first evening surrounded by children, who helped me to prepare my dinner. After having shared my meal with them, I walked up the stairs to the second floor where I rested until I was woken up by the voices of people entering the house. As sunset beckoned, followed by nightfall, a group of about twenty adults, who were wearing loincloths, arrived. Some of them had come by motorbike, others on foot. Later, I learned that they are a group of the Orang Rimba from Kejasung Kecil led by Tumenggung[1] NG who paid regular visits to the house since the first floor was used to store property owned by the *tumenggung*, such as a television, a DVD player, and a generator. In addition, the house was surrounded by other things which were hung on *sesudungons*[2] located to the left of the house, near the rubber trees. Most of this property had been acquired using money that the *tumenggung* had collected from selling rubber and oil palm fruits, or from the monthly salary from the plantations, and income from hunting and gathering.

I walked down the stairs to the first floor where I met *tumenggung*, who had just arrived in the house accompanied by his two wives, children, and other relatives. As they entered the house, they made an effort to switch on the gasoline-powered electric generator. As soon as they managed to get it running, people got busy trying to recharge their mobile phones[3] and turning on the television set. That night, *tumenggung* and his people

[1] *Tumenggung* is a group leader of the Orang Rimba.

[2] *Sesudungon* are huts constructed from four wooden posts with a roof of plastic or leaves (see Chapter II).

[3] Together with motorbikes, mobile phones are becoming more popular among the Orang Rimba and both are seen as practical in the new environment as they facilitate economic activities. Motorbikes are a crucial mode of transport, while mobile phones are important for communication. For instance, some members offer their services as *ojek* drivers (motorbikes for rent) for people who travel to and from the group, such as NGO workers, activists, researchers, and members of neighboring Malay or transmigrant communities. Mobile phones are used to communicate with middlemen about demand and prices for Non-Timber Forest Products (NTFPs) and palm oil fruits.

watched 1990s Indonesian martial arts films on the DVD player. I joined them for about two hours. While we watched the films, I had a conversation with *tumenggung*, his second wife and other people about my research; meanwhile, the children imitated the martial arts moves being played out on the screen.

1.1 Research problem

While reflecting on the first few nights in the field, my thoughts went back to the year 2006, when I conducted my first ethnographic research on the Orang Rimba in another location, namely in Pamenang, a village in the district of Merangin Regency, in central Jambi. At that time, in the final days of my fieldwork, I was a witness to the dilemma that the Orang Rimba face. Today, they live in the resettlement housing provided by the government with very limited sources of livelihood. They struggle to maintain their unstable income that largely comes from collecting rubber seeds and hunting wild pigs. They make choices about how to spend their limited money on daily needs.

The advent of many changes has forced the Orang Rimba to alter their livelihoods as pressure has intensified on their nomadic lifestyle as their land shrinks. Forest degradation has reduced the Orang Rimba's access to resources inside the forest since the 1970s. Thus, they have had to make culturally costly adjustments and adaptations. For instance, in some cases, this has included a shift towards leading sedentary lives.

My dissertation is tailored towards capturing these transformation processes among the Orang Rimba in Jambi Province (Sumatra, Indonesia) through the lens of food security. This specific focus on patterns of food production and consumption among hunters-gatherers, and among the Orang Rimba in particular, is important and appropriate for several reasons.

First, both within and outside Indonesia, there is concern about the impacts of above-mentioned processes of forest degradation and land conversion on forest-dependent peoples' diets. While the relationship between forest cover and food security is not yet fully understood, it is clear that healthy forests make important contributions to local diets (Dounias and Froment 2011; Ickowitz et al. 2016; Rowland et al. 2016). So far there is little empirical work that investigates how deforestation affects the quality and quantity of forest-dependent peoples' diets, but the available evidence suggests that dietary diversity is negatively impacted by forest loss (et al. 2018). Thus, the reduced ecological diversity and abundance of forest resources that form important components of Orang Rimba diets, poses a potential challenge to food security.

Second, given these effects of forest degradation, contemporary hunter-gatherers combine their forest-based livelihoods with a range of other income-generating activities (Kelly 2013; Fortier 2018; Reyes-García et al. 2019). In the case of the Orang Rimba this includes maintaining rubber and oil palm plantations. With the increasing importance of cash income earned from these activities, it becomes important to ask how this economic change is reflected in dietary change. The availability of cash might lead to richer, more abundant or more varied diets, and thus have a positive impact on food security. However, the fast integration of previously subsistence-oriented societies into a cash economy, is known to often result in one-sided diets in which imported, high-energy, but nutrition-low

food is overrepresented (Haddad et al. 2015; WHO 2017; Albert et al. 2020).
Third, alongside rapid forest loss and forest degradation, the processes of change of which the Orang Rimba and other hunter-gatherer peoples are part, also include forest conservation. As is clear from the reflections introducing this chapter, part of the people featuring in this study live within the boundaries of a protected area, the Bukit Duabelas National Park. This raises questions about the position of indigenous peoples in protected areas, and the effect of conservation initiatives on their access to food in particular (see Lewis 2016; Colchester 2018; Heim 2020).

Despite the importance of these interlinked topics, they are rarely discussed in relation to the Orang Rimba, as is evident from the relatively limited number of publications on these topics. Thus, my dissertation aims to contribute to filling these gaps by looking at how processes of environmental and social change are reflected in what the Orang Rimba eat, how and from where they obtain their food, and what this means for their food security. These transformation processes are visible not only in their involvement in the cash market, the growing of cash crops, and their participation in the development process, but also in their identity and social relations. With respect to identity, this dissertation explores the dilemma the Orang Rimba face in terms of whether they remain hunter-gatherers or become farmers. While the Orang Rimba still hold on to hunting and gathering, and to their traditions and culture, they also engage in rubber and oil palm cultivation as farmers, employees, and middlemen. These changes are the result of, but also give rise to, altered social relations within and outside Orang Rimba society. This is especially so as many Orang Rimba nowadays live on the forest edge, where interaction with Malay people, the majority population in Jambi, and transmigrants from Java has become unavoidable. These interactions take place in a wider context of a development policy that is based on forest exploitation, plantation agriculture, and transmigration on the one hand, and forest conservation on the other hand. It is, therefore, necessary to look at the interaction between the Orang Rimba, the Indonesian state, forestry and agricultural companies, neighboring ethnic groups, conservation agencies/efforts, and non-governmental organizations (NGOs).

The main question I aim to answer in this dissertation is: *What are the patterns of food production and consumption among different Orang Rimba groups and how do these patterns relate to their food security?* In addition, I answer the following sub-questions:

1. What do the Orang Rimba eat?
2. How do they obtain their food?
3. To what extent are the Orang Rimba food (in)secure?
4. How do they adjust their modes of livelihood under changing environmental and social conditions?

Through answering these questions, my dissertation examines both the external and internal factors that shape the ongoing transformation processes among the Orang Rimba and, consequently, their food security. It shows that after all, the Orang Rimba cannot be described as passive actors. They participate actively in the development process and experience its attendant benefits and demerits. At the same time, they have only to a

very limited extent become politically or economically involved beyond their traditional territories. I argue that, rather than attempting to change the outside world, it is by adapting to changing circumstances that the Orang Rimba mitigate the impact of the development process on their lifeways. However, as I will show, adaptation strategies considerably differ within the Orang Rimba population.
This dissertation has six chapters in which Chapter I introduces the research outline, the research questions, the key concepts related to food (in)security, and the methods used during the fieldwork. It also describes in broad terms the field sites of the Orang Rimba in which the research was executed.

Chapter II first discusses the Orang Rimba's connections with the outside world and the transformation processes that have taken place among the Orang Rimba, including government efforts to resettle the Orang Rimba, before turning to the contemporary social, cultural, and economic conditions that characterize the Orang Rimba's way of life. These also include the large-scale logging operations and establishment of oil palm and rubber plantations. This chapter includes a discussion of the role of the national park and NGOs in the livelihoods of the Orang Rimba.

Chapters III, IV, and V are dedicated to the presentation and analysis of the results from my ethnographic research of the three Orang Rimba groups, namely the Sako Tulang group, the Terab group, and the Air Hitam group. The presentation of ethnographic information on their livelihoods and social situation, combined with the analysis of their daily food intake, is the core of each of these three chapters.

Chapter VI provides a comparative analysis of food security among the three Orang Rimba groups in relation to their respective ethnographic characteristics and livelihood strategies, and highlights both the differences and commonalities between the groups. It also offers the conclusion and reflects on the Orang Rimba's heterogeneous situation in relation to the existing literature and food security frameworks.

1.2 The Orang Rimba at a glance

Most Orang Rimba live in Jambi Province, although they are also present in surrounding provinces such as Riau, South Sumatra, and West Sumatra (see Prasetijo 2015). Within Jambi, the Orang Rimba live on undulating land that lies between Batanghari River and the foothills of Bukit Barisan Mountain range. They settle in small groups in forested areas and reside along river branches or tributaries that support their livelihoods. Their main living areas are (see Prasetijo 2011, Sandbukt and WARSI[4] 1998): (1) inside the Taman Nasional Bukit Duabelas (TNBD) or Bukit Duabelas National Park, which is the focus of this study; (2) around Taman Nasional Bukit Tiga Puluh (TNTP) or Bukit Tigapuluh National Park in northern Jambi; and (3) along the Trans Sumatra Highway in southern Jambi (see Figures 1 and 2).

[4] During my fieldwork, I got tremendous assistance from a local non-governmental organization named KKI WARSI, hereafter referred to as Warsi.

Figure 1. Map of Indonesia highlighting Jambi Province
Source: www.id.emb-japan.go.jp, accessed 24 Sept 2018

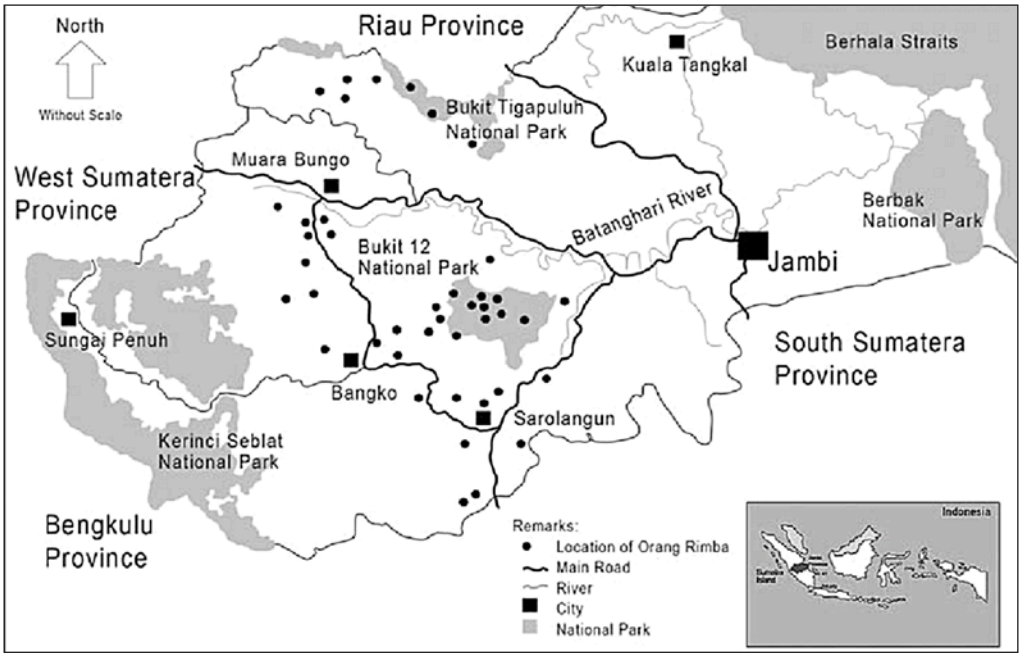

Figure 2. Location of the Orang Rimba in Jambi Province
Source: GIS Department of WARSI

The first area, Bukit Duabelas, has been impacted by transmigration and forest degradation due to operations of logging companies. The central and eastern parts of the protected area, however, are still thinly covered with forest. No matter how small the area is, the hills of Bukit Duabelas and the areas close to the Batanghari River have provided some protection to the forest on which the Orang Rimba depend for their livelihood. The second area is the buffer zone of the Bukit Tigapuluh National Park, which is situated

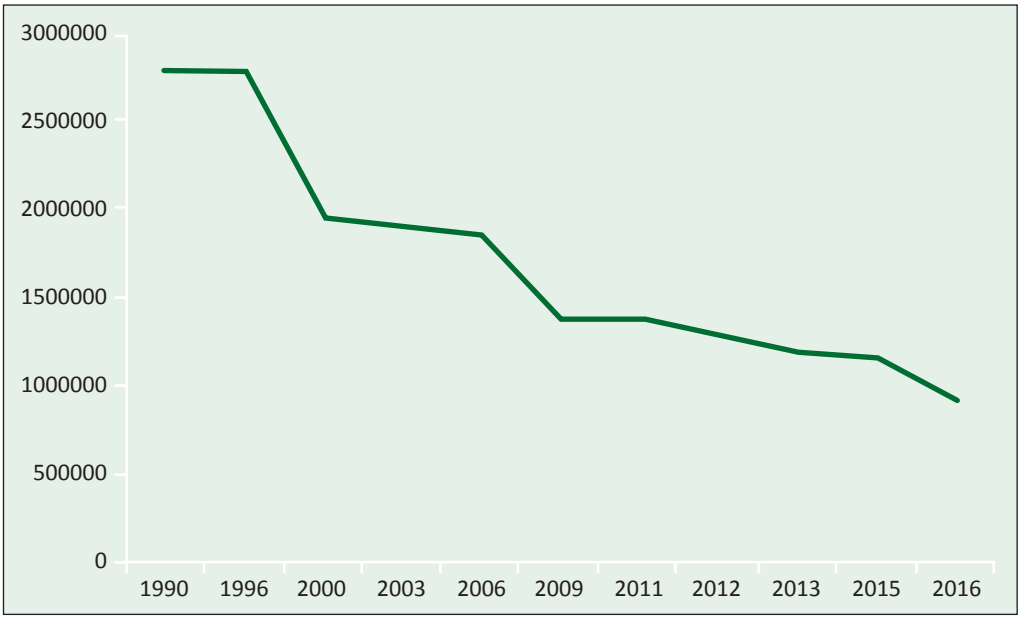

Figure 3. Forest cover in Jambi, 1990-2016 (ha)
Source: data from Ministry of Forestry, various years; graph was developed by the author

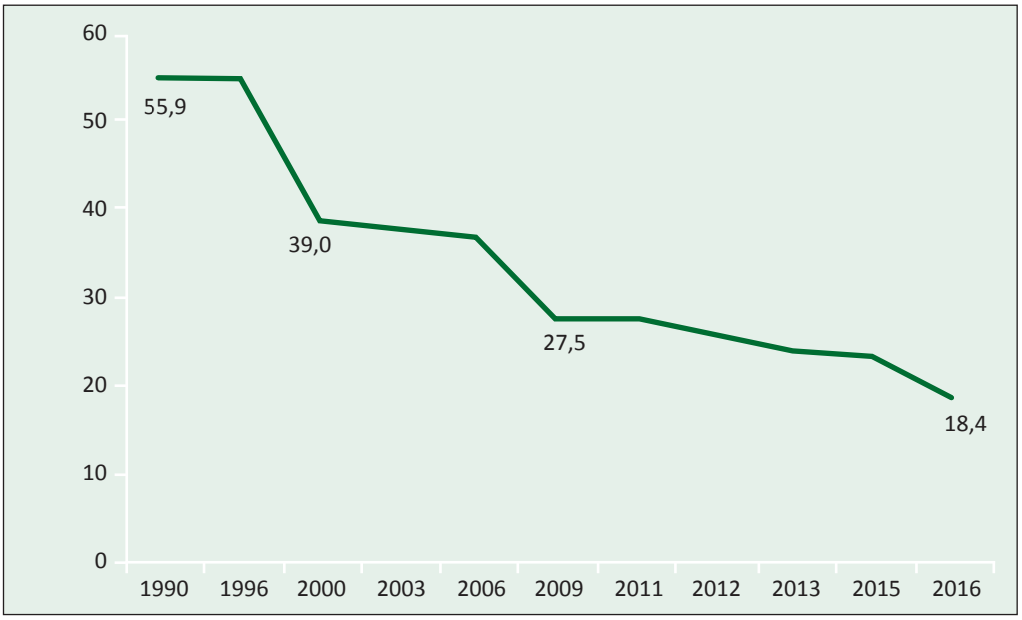

Figure 4. The decline of forest cover in Jambi, 1990-2016 (%)
Source: calculated by the author

around Batanghari River and the Bukit Tigapuluh. This forest is under serious threat from timber operations (both legal and illegal) and large-scale conversion for plantation agriculture, which has been going on for a long time.

The third area, which is situated between the Tembesi River, the Merangin River, and the Trans Sumatra Highway, has changed drastically due to the transmigration projects of Kubang Ujo and Pamenang that were carried out in the 1970s, and which were followed, first, by logging operations in the 1980s, and thereafter by the development of oil palm plantations. As farmers living around the forest rapidly opened up areas in the periphery of the transmigration areas to secure arable land, within a short time the Orang Rimba lost almost all of their traditional economic resources (Sandbukt and WARSI 1998).

It is difficult to estimate the total Orang Rimba population since updated census data are not available. In 2008 WARSI estimated the total number of the Orang Rimba in Jambi Province to amount to about 3,650 people (WARSI 2009). In 2010, WARSI and BPS Indonesia jointly did another census, but this only covered the Bukit Duabelas area. This census estimated the total number of the Orang Rimba in the park at about 1,775 people (BPS and WARSI 2011). They are currently divided over 13 subgroups that live inside, surrounding and outside the Bukit Duabelas Forest. As I will explain in section 1.5, from these I chose three groups as the main focus of my research.
Jambi is one of 34 provinces in Indonesia and covers an area of 50,058 km2 or about over 5 million ha (BPS 2017). While most of this area used to consist of rainforest, since the 1970s forest cover has declined to a worrying degree (see Prasetijo 2017). No public data are available for the 1970s, however, based on data derived from the Ministry of Forestry for the period of 1990 up to 2016, it can be said that forest cover fell from roughly 2.7 to around 1 million ha between 1990 and 2016 (Figure 3). If we compare forest cover during the 1990-2016 period with the total area of Jambi, it can be said that forest cover has declined from 55.9% in 1990 to 18.4% in 2016 (Figure 4). This equals a decline of around 37.5% in a 26-year period.

The gradual development of a road infrastructure since the Sukarno era up to the Suharto era contributed to the rapid forest degradation and increased pressure on the natural resources in Jambi. Prior to the construction of the highways, the people of Sumatra, and specifically those in the Jambi area, relied on the Batanghari River as a mode of transportation. As more roads were built, access to the forest became relatively easy, fueling the development of the wood industry in the area, to meet the rapidly increasing demand for wood products on the domestic and international markets (Siagian 2007). Today, the population of Jambi is comprised predominantly of Malay people and transmigrants from Java. Using data from the Statistics Indonesia or *Badan Pusat Statistik* (BPS) in 2000, we see that the dominant population is Malay, followed by Javanese and

Kerinci (see Table 1). Indigenous groups[5] such as the Orang Rimba, Talang Mamak and others form less than 10% of the population (Prasetijo 2015).

Table 1. Jambi population based on ethnic composition, 2000 (in numbers and percentage)

No.	Ethnic Groups	Numbers in 2000	% of Population
1.	Malay Jambi	994,290	41.4
2.	Kerinci	254,125	10.6
3.	Javanese	664,931	27.6
4.	Minangkabau	131,609	5.5
5.	Sundanese	62,956	2.6
6.	Bugis	62,185	2.6
7.	Others (including 'indigenous groups' such as Penghulu, Pindah, Talang Mamak, Batin, Orang Rimba and Bajau)	235,282	9.7
	Total Population	**2,405,378**	**100**

Source: Prasetijo, 2015: 42

The Orang Rimba prefer to be referred to as "Orang Rimba", which literally means 'People of the Forest' (see Prasetijo 2015, Wardani 2011). This is because, to them, living in the forest signifies a proud way of life characterized by a harmonious co-existence with the forest. It is this relationship that enables them to preserve their culture in its entirety with all the attendant traditions, customs and taboos. In the past other ethnic groups and scholars have tended to refer to the Orang Rimba as the Orang Kubu. However, this has negative social connotations, as it is associated with being dirty, vile, smelly, stinky, wild, primitive, and magical. This general perception is wide-spread; for many people in Jambi and beyond, the Orang Rimba are equal to a small minority group that is backward, poor, nomadic, and living an uncivilized lifestyle in the forest. It is this negative perception that has led to the implementation of policies that have been detrimental to various aspects of their lives, including their livelihood.

The Orang Rimba prefer to call people they consider outsiders "Orang Terang (People of the Light)", which means non-forest dwellers, who lead a way of life that is different from theirs. In this dissertation, I will use the term Orang Terang to generally refer to people other than the Orang Rimba. I use this term as people in my research locations used it in daily life. The term was used to describe transmigrants (people who were migrated from

[5] The concept of 'indigenous peoples' is somewhat ambivalent in Indonesia. Until recently, the government used other concepts like 'isolated tribes' (*suku-suku terasing*). In recent years, and under the influence of the international discourse on 'indigenous peoples', the government has now adopted the concept of '*adat* communities' (*masyarakat adat*). In line with use of the concept of 'indigenous peoples' by the international bodies of the United Nations (UN), the indigenous movement in Indonesia, and most researchers, I also use this concept to refer to the non-dominant ethnic groups in Indonesia like the Orang Rimba. As my focus is on food security among the Orang Rimba, I have decided to discuss this political issue only when it affects the Orang Rimba directly, such as in relation to the government's resettlement policies. The Orang Rimba also do not play an important role in the country's indigenous peoples' movement.

Java, Bali, and Madura, as well as migrants from other areas to Jambi), and other ethnic groups. That said, in other contexts, I will use the term "other ethnic groups" or mention a particular ethnic identity in the discussion of specific groups such as the Orang Melayu or the Orang Dusun (Malay People), the Orang Jawa (Javanese), and the Orang Sunda (Sundanese).

While most Orang Terang are farmers, the Orang Rimba are to a large extent hunter-gatherers. That is, hunting, fishing, gathering, and (barter) trade are prominent components of the Orang Rimba livelihoods, even though various forms of (plantation) agriculture are gaining importance. In addition, the Orang Rimba have distinct value systems, cultural practices and traditions, many of which reflect the central role of the forest in Orang Rimba lives. Of particular importance is the practice of *melangun*, a set of taboos and mobility rules related to death and mourning (see Chapter II).

This dissertation will also extensively discuss the livelihood of the Orang Rimba, their interaction with other groups, and the impact of development processes in Jambi on their livelihood that can be referred to as follows. Basically, the Orang Rimba lead what to some may seem a unique lifestyle owing much to the values and traditions they espouse, which can be traced back many centuries. It is a lifestyle that is in sharp contrast with those espoused by other communities. The uniqueness in their value system is reflected in their traditions, in the food they eat, in the shelters they use to serve as housing, and in the methods they employ in cultivation. They for instance eke a living by gathering forest products and hunting forest animals, some of which they sell to local markets to earn money they need to buy an array of basic necessities. However, their lifestyle is strongly affected by external developments.

The most important source of change came about after the construction of the Trans Sumatra Highway, which turned the region into a one of the destinations for transmigrants[6] and forests started to be carved into large-scale plantations. Transmigration, manifested in Kubang Ujo and Pamenang transmigration projects, has had serious effects on all areas inhabited by the Orang Rimba. Forests, which were still abundant during the 1980s, had by the 1990s succumbed to oil palm and rubber plantations. Initially, the Orang Rimba created a rim around the place where they lived to protect forests for their future use. However, with in a very short time, the Orang Rimba realized that they had lost almost all of their traditional economic resources, in terms of natural forests or secondary vegetation which served as area for growing fruits. No compensation was offered for this loss. Nowadays, most of the Orang Rimba live by cultivating small plots of land on which they used to grow rubber plants.

The influx of transmigrants coupled with logging and monoculture agriculture activities, legal and illegal alike, by worsening forest degradation and decimation of biodiversity, has reduced the Orang Rimba's availability of and access to economic resources. To

[6] Transmigrants are people in the program inherited by the Dutch colonial government and adopted by the Indonesian government to move people who are landless and living in densely populated areas (mostly from Java Island, to a lesser extent from Bali and Madura) to outer islands such as Kalimantan, Maluku, Papua, Sulawesi, and Sumatra under the coordination of the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration.

supplement decreasing economic resources as the forests decreased, the Orang Rimba have had to make often culturally costly adjustments and adaptations. These have included attempts to lead sedentary lives, by starting to cultivate oil palms and rubber trees, as well as engaging in selling and buying other commodities through intermediaries.
At the same time, the range of basic necessities has been rising over time in line with more interaction with other communities. However, many aspects of life that seem normal to communities outside the Orang Rimba, more often than not constitute taboos to be avoided as much as possible. This sets off the background for acrimony-plagued inter-ethnic relations between the Orang Rimba on the one hand and other communities on the other.

1.3 Hunter-gatherers

Before discussing the concept of food security in relation to hunter-gatherers, which is at the heart of this dissertation, it is useful to first briefly reflect on several other concepts and ideas that appear in anthropological research on hunter-gatherers more generally.
In defining hunter-gatherers, I follow Kelly (2013:2), who describes them as: '[…] people […] who do (or did) procure much if not all of their food from hunting, fishing, and gathering. But […] many of these "hunter-gatherers" grow some of their own food, trade with agriculturalists for produce, or participate in cash economies." Importantly, Kelly further emphasizes that hunter-gatherers are not just defined economically, but socially as well. Moreover, like their economic characterization, the social characteristics of hunter-gatherer societies have been changing: "Through the years, thought/thinking/theorizing about the archetypal hunter-gatherer society changed from a closed, patrilineal horde to bilateral bands with fluid membership; from 'Man the Hunter' to 'Woman the Gatherer'; from egalitarian bands to rural proletariat; from isolated Paleolithic relics to marginalized members of the contemporary world system" (Kelly 2013:2).
By Kelly's definitions and characterizations, the Orang Rimba can indeed be classified as hunter-gatherers, as has been the general conclusion of previous anthropological writings on the Orang Rimba (see Sandbukt 1988, Persoon 1989, Soetomo 1995, Weintre 2003, Sager 2008, Prasetijo 2011, and Elkholy 2016) and as will be further confirmed in the following chapters. Moreover, as Minter has shown for the Philippine Agta (2010), Kelly's definition is particularly appropriate in the discussion of contemporary hunter-gatherers, since it views hunting and gathering as a dynamic continuum rather than a static state. The use of the term does also not completely exclude the practice of any form of agriculture by these communities (see also Fortier 2018; Griffin 2018; Reyes-García et al. 2019).
An important distinction within the broad category of hunter-gatherers is between primary (or continuous) versus secondary (or re-specialized) hunter-gatherers. The large majority of contemporary hunter-gatherer peoples belong to the group of primary hunter-gatherers, who are considered to have continuously followed a hunting and gathering mode of existence from prehistory up to the present. In contrast, for secondary hunter-gatherers, it is a relatively recent adaptation and a move away from an agricultural mode of production. Explanations for the existence of secondary hunter-gatherers are the occurrence of environmental crises that lead to the occupation of a new environment, as does conflict, or retreat from colonizing forces. Examples of such secondary hunter-

gatherers include the Thai Mlabri and the Punan of Borneo (Layton 2001; Bellwood 1999; Oota et al. 2005; Hoffman 1984; and Endicott 1999).
It is generally assumed that the Orang Rimba, too, belong to the group of secondary hunter-gatherers (Persoon 1989). The main arguments for this idea are their genetic similarity to neighboring Malay peoples; their accumulation of wealth, notably in the form of cloth, which is unusual for primary hunter-gatherers; linguistic similarities with neighboring ethnic groups; and their stratified political organization (Chapter 2).

1.4 Food and livelihood security

In discussing the food security of the Orang Rimba, I will use both mainstream quantitative approaches and qualitative, anthropological perspectives. The mainstream standard, generally determined by international organizations, is a benchmark for measuring food security, using a set of indicators. On the other hand, using an anthropological perspective, based on an ethnographic approach, helps to analyze the qualitative context of food security and the transformation processes the Orang Rimba are currently going through (Koentjaraningrat 1979; Laksono 2002; Tsing 2005).

The mainstream standard
The concept of food security remains a source of debate as individuals and organizations differ in the definitions and approaches they adopt in this regard. With this in mind, a review of some of the definitions used and approaches adopted by organizations and individuals involved in the role food security plays in today's world is necessary. In 1996, the World Bank simply defined food security as "Access by all people at all times to enough food for an active, healthy life" (World Bank 1996). Meanwhile, the definition of food security adopted during the Plan of Action of the World Food Summit, held in Rome in November 1996, states that "Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO 2006: 1). Interestingly, and relevant for this thesis, over the years the notion of food preferences has thus gained importance in the definition of food security.
Food security took center stage in the 1970s (Limenta and Chandra 2017, FAO 2006, Lasa 2005). At the time, the concept of food security emphasized the availability of food in general and cereals in particular, at the national and international level. This was largely attributable to the 1972–1974 world food crises. The approach informed the gist of the food security policy adopted by the then fledgling Government of Indonesia (GoI), which focused on food provision and was known, alternatively, as the Food Availability Approach (FAA). Food security then was closely associated with achieving food self-sufficiency (Limenta and Chandra 2017, Lasa 2005). As a result, it paid little attention to access to food and to its distribution. The approach was underpinned by the assumption that food availability, within a context of efficient trading, automatically ensures its distribution to all regions in the country. Additionally, it was also assumed that food prices were stable and set at fair levels affordable to all families. Nonetheless, sufficient food availability does not preclude the possibility of some people experiencing food shortages amidst conditions

of ample food. In other words, despite the availability of sufficient food supplies, many people suffered from hunger due to their inability to access them. This phenomenon is what is referred to as the hunger paradox (Lasa 2005). In short, the FAA approach, which focuses on food availability, failed to sustain food security in some countries (Simatupang 1999).

In the 1980s, a paradigm shift occurred in the notion of achieving food security, from simply stressing food availability to ensuring access to food at both the household and individual level. The new concept of food security induced a shift to a graduated form of food security, referring to a process that considers individual, household, and regional food security – in that order – as a more reliable measure than the other way around. Previous concepts of food security were based on the premise that regional food security engenders food security at the household level, which, in turn, leads to individual food security (Maxwell and Slater 2003).

In this dissertation, I will use the household level as the unit of analysis and will expand from there to the group level. I follow what Maxwell as well as Bentley and Pelto state about the importance of "measuring" food security at the household level: "First, the household is the logical social unit through which to view the question of access to food, in spite of intra-household inequalities in the distribution of food (Bentley and Pelto 1991). This demands not only knowledge of overall household needs and consumption, but also an understanding of intra-household dynamics affecting procurement and distribution of food. Second, household food security should be considered a necessary but not sufficient condition for adequate nutrition. […] Third, food security must be understood in terms of the rationality and logic of the persons or social units involved" (Maxwell 1996: 291-292).

Based on the concept of food security developed by FAO (2001), there are four dimensions of food security to be considered, namely: food availability, accessibility, vulnerability, and sustainability. "These four dimensions are interconnected and all must be present for people to be food secure, as no single element is able to ensure and sustain food security on its own. Food insecurity occurs when one or more of these elements is weakened and can impact on the national, household and individual levels. Food security at one level does not indicate food security at another" (Jember and Asmamaw 2014: 7).

Maxwell and Frankenberger (1997) define these four dimensions of food security at the household level. Food *availability* relates to the sufficiency of food for the entire household over a given period (a day, a week, a month, a year, etc.). The availability of food is closely related to how households acquire food, i.e., whether they mostly rely on their own production as opposed to purchasing food or receiving food (aid) from others.

The second dimension is *accessibility*. This dimension is derived from concerns over food entitlement raised by Amartya Sen in the 1980s. Despite the availability of abundant food, some people may suffer from hunger because they do not have sufficient access to it. In other words, abundant food supply cannot in itself improve food security for individuals without the right of access to food at the household level (Amartya Sen in Lassa 2005). Thus, *accessibility* is associated with the right to food: the right to produce, purchase, exchange, and receive food (Maxwell 1996).

The third dimension is *vulnerability*, which is sometimes also referred to as *security*: secure access to enough food. This includes the notions of risk and risk avoidance such as crop failure, natural or other disasters, crises, and other shocks (such as price volatility,

market failures, political and social instability, as well as other external factors) to achieve food security (Maxwell and Frankenberger 1997).

The last dimension is *sustainability*, alternatively referred to as *time dimension* (Maxwell and Frankenberger 1992) or *stability* (Jember and Asmamaw 2014). Maxwell and Frankenberger define this dimension as "secure access to enough food at all times" (1992: 15). A sustainable food security system must be strong enough to absorb various risks, including but not limited to periods when domestic production declines.

The food (in)security status reflects the condition in a given household with respect to food availability, access, vulnerability, and sustainability, rather than that of each individual in the household. However, different individuals in a household may face different degrees of food insecurity or vulnerability to suffering from hunger.

Meanwhile, livelihood security is "the assessment of a household's sustainable and adequate access to income and resources, to meet basic needs" (Frankenberger and McCaston 1998: 30-35). Analysis of livelihood security considers the availability, access, quality, and utilization of incomes and resources necessary to fulfilling basic household needs. In light of that, it is also important to discuss the concept of vulnerability in relation to livelihood and food security (see Niehof 2010). The concept of livelihood vulnerability mainly refers to the relation and the differences between external and internal conditions. The external conditions of livelihood vulnerability consist of risks, shocks, and stress to which individuals or households are exposed. The internal conditions refer to a household's ability to cope with problems that might arise from external factors without losing its capabilities and assets (Chambers 1990 in Niehof 2010: 26-28). In the context of food security, households with vulnerable livelihoods will have problems providing food for family members in a sustainable way. Households with sustainable livelihoods will achieve a higher level of food security.

The interconnection between food and livelihood security can be seen as follows. Food security is a function of the ability to have access to assets and income, while the lack of assets, such as land in agrarian societies, and low income leads to food insecurity. Food insecurity may be transient, acute or chronic, depending on the ability of the household to cope with seasonal fluctuations in food insecurity. Acute shortages in food availability, food prices, and income cause acute food insecurity. Without a coping mechanism, this will lead to chronic food insecurity. Households that have the capacity to cope with seasonal food insecurity become resilient, hence food secure; those that cannot cope are referred to as fragile, hence have high vulnerability to food insecurity (Lovendal et al. 2004).

A useful tool to make the link between food and livelihood is the Sustainable Livelihoods Approach (SLA) (see Lovendal et al. 2004 and Figure 3). The SLA looks at the various assets a society has at its disposal in the form of human, social, natural, physical, and financial capital. In addition, it takes into account mediating factors, such as regional and central government policies, programs, beliefs and attitudes, and laws in the regional and national level or social systems. These factors have a significant influence on livelihood strategies, household food distribution, and health-related activities. Together, the assets, mediating factors and activities determine intermediate outcomes with respect to food access at the household and individual level, as well as the biological utilization of food. This then allows for an assessment of food security.

The SLA also provides space for looking at coping strategies. Coping strategies are generally referred to as the ways and methods households employ to adjust their food consumption to shortfalls in terms of availability and access to food. According to Maxwell et al. (2003), coping strategies encompass everything employed by households to address impending and current shortages of food for their families. Households with better coping strategies are better able to avert falling into food insecurity than those with limited strategies. In the context of the Orang Rimba, the SLA can contribute to our understanding of how various factors together determine food security.

In Indonesia, food security policy, also known as 'food policy', has been transformed from time to time. Indonesia has articulated food security as follows in Law No. 18 of 2012 concerning Food or *Undang-undang No. 18 tahun 2012 tentang Pangan*: "[…] a condition whereby food needs of the country up to the household level are met, as reflected by sufficient availability of food in terms of quantity and quality, safety, prevalence, accessibility, nutritional value, affordability, compatibility with religion and culture; in order to achieve a healthy, active, and productive life in sustainable way." As defined in this law, food security clearly embodies the dimensions of availability, access, religious and cultural acceptance, as well as biological utilization. Although implicitly present, the dimensions of security/vulnerability and sustainability/stability over time are less pronounced.

To measure food security and vulnerability at the macro level (national, provincial, and district levels), Indonesia uses the Food Security Map (World Food Programme 2015). The map is produced jointly by the Indonesia Food Security Council, the Ministry of Agriculture

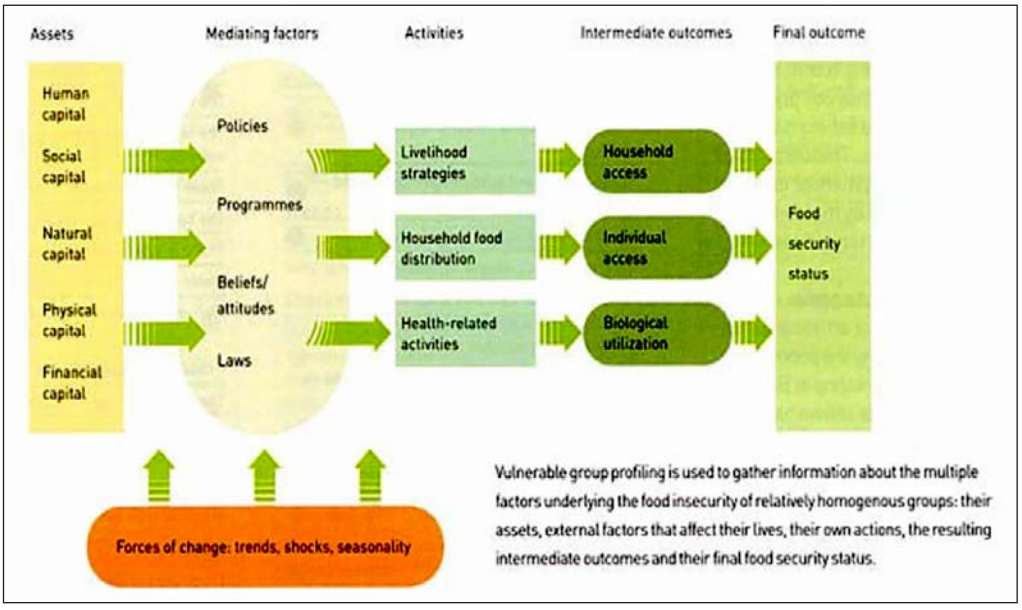

Figure 5. The Sustainable Livelihoods Framework for Food Security Analysis
Source: Lovendal et al. 2004: 21

and the World Food Programme and is presented in the "Food Security and Vulnerability Atlas" which is published once every five years. The Food Security Map is deemed vital in handling food security problems by policy makers at the district, provincial, and national government levels. It is important to note here that for the purpose of this dissertation, I use the 2015 version instead of the latest version of 2020, since this was the version relatively relevant to my data collection. The map is based on the premise that food and nutrition security is multidimensional and requires the analysis of a range of parameters. The atlas uses official statistics from the Statistics Indonesia to measure food and nutrition security through a set of indicators that represent three dimensions of food and nutrition security: aggregate food availability, households' access to food, and individuals' food utilization. Nutrition considerations, including the affordability and availability of nutrient-rich foods, permeate all three dimensions. The following indicators are used (Ministry of Agriculture and World Food Programme 2015):

- Food availability: consumption to net cereal availability ratio;
- Food access: population below poverty line, access to electricity, and villages with connectivity;
- Utilization: infant mortality rate, life expectancy of children <1, children underweight, access to safe drinking water, population living > 5 km from healthcare center/access to healthcare centers, and female illiteracy rate.

Based on the above indicators the Food Security Map indicates that Indonesia experiences both severe food insecurity as well as high food security, with the three highest priority categories comprising over 30% of all districts and the lower priority categories adding up to almost 70% of districts (Table 2).

Table 2. Food security classifications Indonesia, 2015

Priority Number and color	Classification	Number of Districts	Percentage
1 (dark red)	Severely food insecure	14	3.9
2 (red)	Food insecure	44	12.1
3 (yellow)	Relatively food insecure	52	14.3
4 (dark yellow)	Sufficiently food secure	84	23.1
5 (light green)	Food secure	50	13.8
6 (dark green)	Highly food secure	119	32.8
	Total	**363**	**100**

Source: Ministry of Agriculture and World Food Programme 2015

Based on the data on which this map was produced, Jambi Province is a priority number five province, implying it is relatively food secure. However, it is important to look beyond the aggregate level, especially in rural areas. There is more to food security than meets the eye, and this can only be understood if we look more closely at variation within and between populations, as determined by socio-economic status, source of livelihood, and household composition. This is illustrated by the paradoxical situation that the province faces some food vulnerability even though households are able to fulfill at least 80% of their energy requirements. Some households have to spend at least 60% or more of their income on food, which undermines their capacity to satisfy other needs (Badan Pusat Statistik Provinsi Jambi 2010).

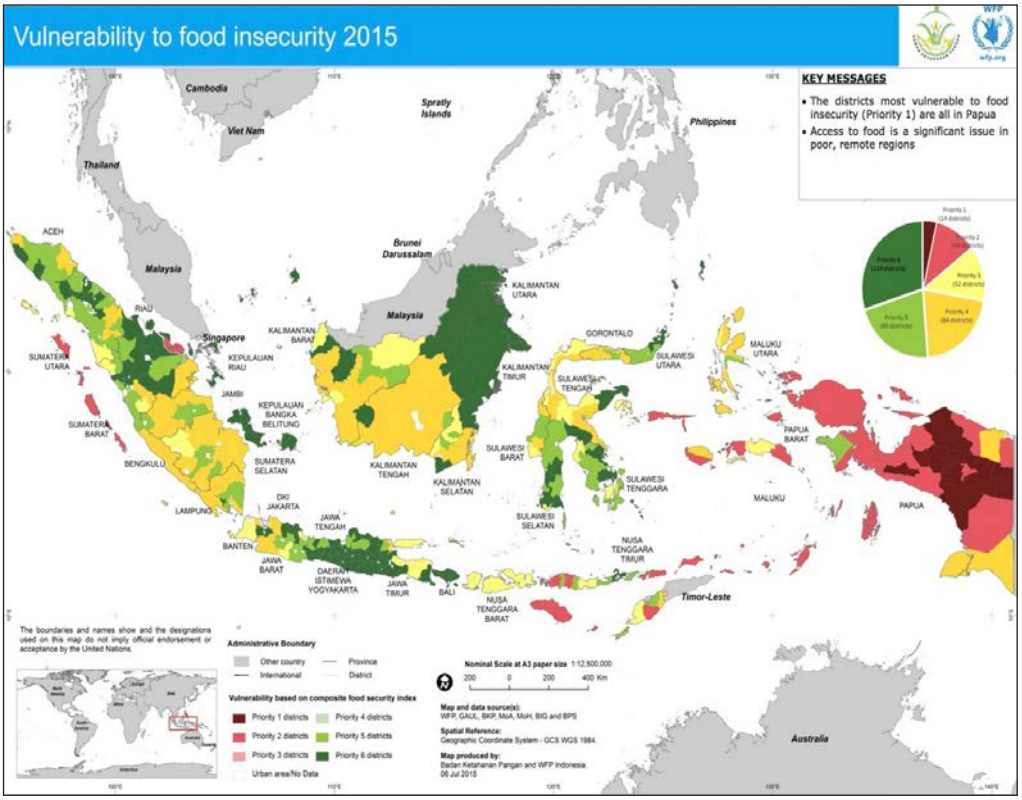

Figure 6. Food Security and Vulnerability Map of Indonesia, 2015
(Ministry of Agriculture and World Food Programme)

While the most recent Jambi Provincial Regional Plan, *Rencana Pembangunan Jangka Menengah Provinsi/RPJMP* (2017-2021), does not contain a food security program, its predecessor (2011-2015) includes a policy on food which is underpinned by the need to increase food production by expanding production areas. These areas include reclaimed swamps such as Tanjung Jabung Barat, Tanjung Jabung Timur, Muaro Jambi, Tebo, Bungo, Batanghari, Sarolangun, and Merangin (RPJMD Provinsi Jambi 2011-2015). One of the problems is that these areas are prone to regular flooding, which is likely to have a large impact on the success of the agricultural program and the diversification of food production. The program is meant to reduce the dependence on rice by promoting the growing of tubers, sweet potatoes, maize, soybeans, vegetables, and fruits. Not much is outlined in terms of increasing food access, however.

The anthropological perspective

The quantitative approach discussed above provides us with a macro-perspective of patterns of food security at the national and sub-national level. This is useful for the identification of priorities in addressing food security issues and for monitoring changes in the food security status over time. However, it does not allow for more nuanced

insights on local variations in food security, nor for explanations for such variation, which requires a more qualitative approach. The anthropology of food has a long history of providing such qualitative understanding of the cultural dimensions of food and eating. Approaches have differed and developed over time, with probably the main contrast being between structuralism and cultural materialism (see Mintz and Du Bois 2002, and de Garine 2004: 16-17, for overviews). The structuralist tradition, led by Lévi-Strauss in the 1960s, considers people's relationships with food to unconsciously reflect deep structural features of society, and does not pay much attention to the more practical aspects of food. In contrast, the cultural materialist view argues that people solely eat for practical reasons and that food preferences are mainly based on practical benefits (see Harris 1985). More recently, such sharp divisions have mostly disappeared and contemporary anthropologists are generally interested both in the practical and symbolic aspects of food (Macbeth and MacClancy 2004, Macbeth 2006, Darmanto 2020).

The ethnographic approach taken in this dissertation is suitable for gaining a detailed understanding of how and by whom food is locally obtained, prepared, and consumed. In addition, ethnography provides insights in how food is culturally and socially perceived, and the role it plays beyond meeting nutritional needs. This is essential in order to understand the food practices and needs of specific groups of people, especially when these practices and needs may differ from surrounding populations, as is often the case for hunter-gatherers.

Food procurement and consumption are important issues in classic ethnographic studies on hunter-gatherers. A major theme includes energy expenditure and caloric intake (see Kelly 2013: 46-76 for an overview). For instance, using the optimal foraging approach, Mintz and Du Bois (2002) show that hunter-gatherers' food strategies are usually aimed at maximizing their caloric intake per unit of time and therefore argue that energetic costs of food strategies should be taken into account. A criticism of optimal foraging models is that they do not take into account the cultural value that may be attached to certain food items or subsistence strategies, such as prestige or taboos (Kelly 2013: 76).
Another important theme related to hunter-gatherers' food security is food sharing. The strong social obligation to share food with relatives is known to be a central feature of both economic and social organization among hunter-gatherers (Woodburn 1982). Kaplan and Hill (1985) discuss this issue in relation to the reciprocity among the Ache foragers in eastern Paraguay. They show that reciprocal food sharing for hunter-gatherers not only ensures individuals' access to secure meat, honey, and other collected resources, but also reflects a communal strategy adopted during times of food shortage. By using this mechanism to increase food security at the group level and by prioritizing those most in need, food sharing helps the group to survive during food crises that are attributable to seasonal variations and conflicts. Hunt (2000) looks at food sharing from an economic anthropological perspective. He shows that meat sharing can be defined as an economic allocation with a strong influence on politics, property rights, and an egalitarian social organization. Furthermore, he argues that documenting the complexity and dynamics of food sharing can serve as a way to understand egalitarian societies. Darmanto (2020) has made similar arguments for sharing ethics on Siberut, off the Sumatran coast.

A final important theme in studies on hunter-gatherers and food is how social and environmental change impacts their subsistence strategies and diets. This theme is receiving most attention in relation to tropical hunter-gatherers, many of whom depend on forests. Arnoldi et al. (2011) explain the link between forests and food security: forests provide a wide range of products for forest-dwellers that are crucial for their food intake, their health, and their well-being. Moreover, even in times of food shortage or food insecurity forests may still provide various kinds of emergency food (Hagen et al. 2017). In a review of studies on the contribution of forest foods to diets, Rowland et al. (2016: 11) show that '[…] forest loss may result in […] adverse consequences on nutrition for local people.' This has been confirmed by a recent study on the impact of forest loss on child dietary diversity in West Africa (Galway et al. 2018).

Indeed, many contemporary hunter-gatherers face high vulnerability to food insecurity (Headland 1987, 1991; Dounias and Froment 2006, 2011), and this is especially true for the Orang Rimba, as recent events have proved (Wardani 2011). Often this can be related directly to the degradation or disappearance of the forest resources on which hunter-gatherers depend. Ecological and cultural changes have implications for the food security and general health of forest-dwelling hunter-gatherers. Dounias and Froment (2016) argue that in a globalizing world, hunter-gatherer societies need to make socio-economic, cultural and political adjustments, simply because the modified environment does not support the old way of life anymore.
In specific cases, life in the forest may no longer be feasible at all. In a socio-economic study on the Punan of East Kalimantan, Levang et al. (2005) note that forest-dwelling hunter-gatherers may not necessarily be better off if they keep living inside the forest. Based on the observation that the Punan have by now largely switched from dependence on forest products to other sources of livelihood, they conclude that: "…. we should not focus on romantic ways to help the last Punan to stay in the forest if it is not their choice. To forest people, the best choice might well be to get out of the forest, in order to get out of poverty" (2005: 231).
This dilemma must also be seen in the context of how the forests in question are being managed. It is often assumed that if it is forest loss that forms the main threat to hunter-gatherers' livelihoods, effective forest protection can potentially reverse that situation. Paradoxically, however, this is not necessarily the case. Much depends on the extent to which resident hunter-gatherers continue to have access and control over natural resources and culturally important sites once protected areas are established. Food security may be seriously undermined in situations where former hunting and gathering grounds have become off-limits for conservation or eco-tourism purposes (Lewis 2016; Colchester 2018). A recent example of this includes the case of the Kwe San in the Bwabwata National Park in Namibia, who have been violently denied access to their foraging grounds (Heim 2020).

The next section will outline how I combine a quantitative and qualitative approach to assess how contemporary Orang Rimba diets reflect various strategies to adjust to changing social and ecological circumstances.

1.5 Research methods

Food is the focus of this study. For the Orang Rimba, as for others, food relates not only to meeting their nutritional needs, but also to their culture and customs, which are different from other ethnic groups in Indonesia, and especially from those of the Malay village people (Orang Dusun/Melayu).

The Orang Rimba are commonly portrayed as primitive people who are markedly different and exotic (see Sager 2008), and this includes their food habits. Having a background in economics, it is perhaps not surprising that my first encounter with the Orang Rimba in 2006 ignited similar thoughts in me. However, with time, I learned that anthropological fieldwork can provide an alternative way of understanding others. I agree with Elkholy (2016) that to gain a proper understanding of the context of the time and space of the Orang Rimba's transformation processes, one must embed oneself into long-term ethnographic fieldwork.

Studying food is complicated and, as Macbeth has argued: "human food is an excellent topic for multidisciplinary discourse" (Macbeth 2006:1). Indeed, this dissertation is based on my economic background as well as on an anthropological approach, which is built on experiences – observations, conversations, interviews, and participation in Orang Rimba's daily lives – that complement quantitative food records, data analysis, and interpretation, as well as the literature review. This study combines quantitative and qualitative research methods and draws on both primary and secondary data.

Primary data collection will be described in detail below. Secondary data on geography, demography and resettlement programs were gathered from government offices like the *Badan Pusat Statistik* or Statistics Indonesia and *Kementrian Sosial* or the Ministry of Social Affairs. Additional information about the Orang Rimba was obtained from academic studies, newspapers, magazines, and unpublished internal documents of WARSI and government organizations, such as the Ministry of Forestry. In addition, WARSI, a local NGO, provided digital maps on the locations of the Orang Rimba and supplied the 2010 raw data on the population of the Orang Rimba.

Primary, quantitative data on food intake, and consumption patterns were collected through a household survey among a total of six households living in three Orang Rimba groups. As will be further explained in the section 'Description of the data on food', particularly the section 'Daily food intake', depending on the sites, these data were recorded for a period of two up to six months, resulting in an extensive database on food intake and food origins.

The methodological basis for this approach was derived from Niehof's study on food security indicators (2010). I was also inspired by Macbeth and MacClancy (2004) with respect to the methods of researching food habits, as well as by Macbeth (2006) on the subject of food preferences. Using food security indicators measured during a specific timeframe (e.g., one day, one month, or one year) reveals the degree of a household's food security and food consumption trends. This approach helped me to identify a household's capability to access sufficient food, in terms of quantity, quality, and food preferences. It also revealed the origin of the food, i.e., whether it was obtained from the household's own production (hunting, gathering, farming), bought from a market or store, or obtained through sharing.

The main unit of analysis in this study is the 'household'. The Statistics Indonesia (BPS) defines the household as "an individual or group of people living in a physical building or part of it, who usually commonly provide for food and other essentials of living. Common provision for food means one group organizing daily needs for all of household members" (BPS 2017). In practice, a household usually is a nuclear family that consists of a father, a mother, and their children. In some cases, a household may also have additional family members like grandparents and other close relatives.

The standard Indonesian conception of the household is similar to that of the Orang Rimba nuclear family, which generally consists of a husband, the wife or wives, and their children. Sometimes the household also includes a single grandparent or other close relatives who are living in unfortunate conditions, for instance due to loss of a spouse or child(ren). Together they organize the provision of daily needs, especially food, for their own household. As will be detailed in the following chapters, men generally are responsible for providing cash income or other goods (such as clothes, motorbikes, cellphones, and food supplies), while women are responsible for tasks such as the management of expenditures and distribution of goods, food gathering, fetching drinking water, collecting firewood, and taking care of the children.

To complement the quantitative household records on food intake, I used an ethnographic approach to understand the cultural context of food provisioning and consumption. Through in-depth interviewing and participant observation, ethnography has enabled me to grasp the Orang Rimba's perceptions, attitudes, values, belief systems, and norms regarding food security. Specifically, this has resulted in qualitative data on the classification of food and food taboos. It has also allowed me to understand the relationship between livelihoods, knowledge, and cultural practices and how these are adjusted in response to the challenges the Orang Rimba face. Ethnographic methods have further helped me to observe and document the complexity of Orang Rimba's relationships within and outside their own groups.

While the historical analysis on food security using combined methods is typically limited in the context of the Orang Rimba, this dissertation is focusing only on the food intake data gathered during the fieldwork. In total, I collected 2,520 intake records among the three groups of the Sako Tulang, the Terab, and the Air Hitam. The data collection took place during various periods of fieldwork of 21 months in total, spread across 2012 to 2016. With this set of data, I managed to analyze the patterns of the food production and consumption of the three groups that lead to the food security condition of the Orang Rimba. In the past, ethnographic accounts on the Orang Rimba often mentioned in general terms the types of food the people were eating and whether they obtained it through hunting and gathering or otherwise. More detailed analyses however were never given and that is why it is very difficult to discuss the food security of the Orang Rimba in earlier times. Governmental reports both in colonial times as well as after Indonesian independence often mentioned the irregular production of food and sometimes even made statements about the occurrence of hunger among the Orang Rimba without substantiating such statements (see for instance KDepartemen Sosial 1974).

Site selection

The Orang Rimba are not a homogenous population. Instead, there is considerable internal

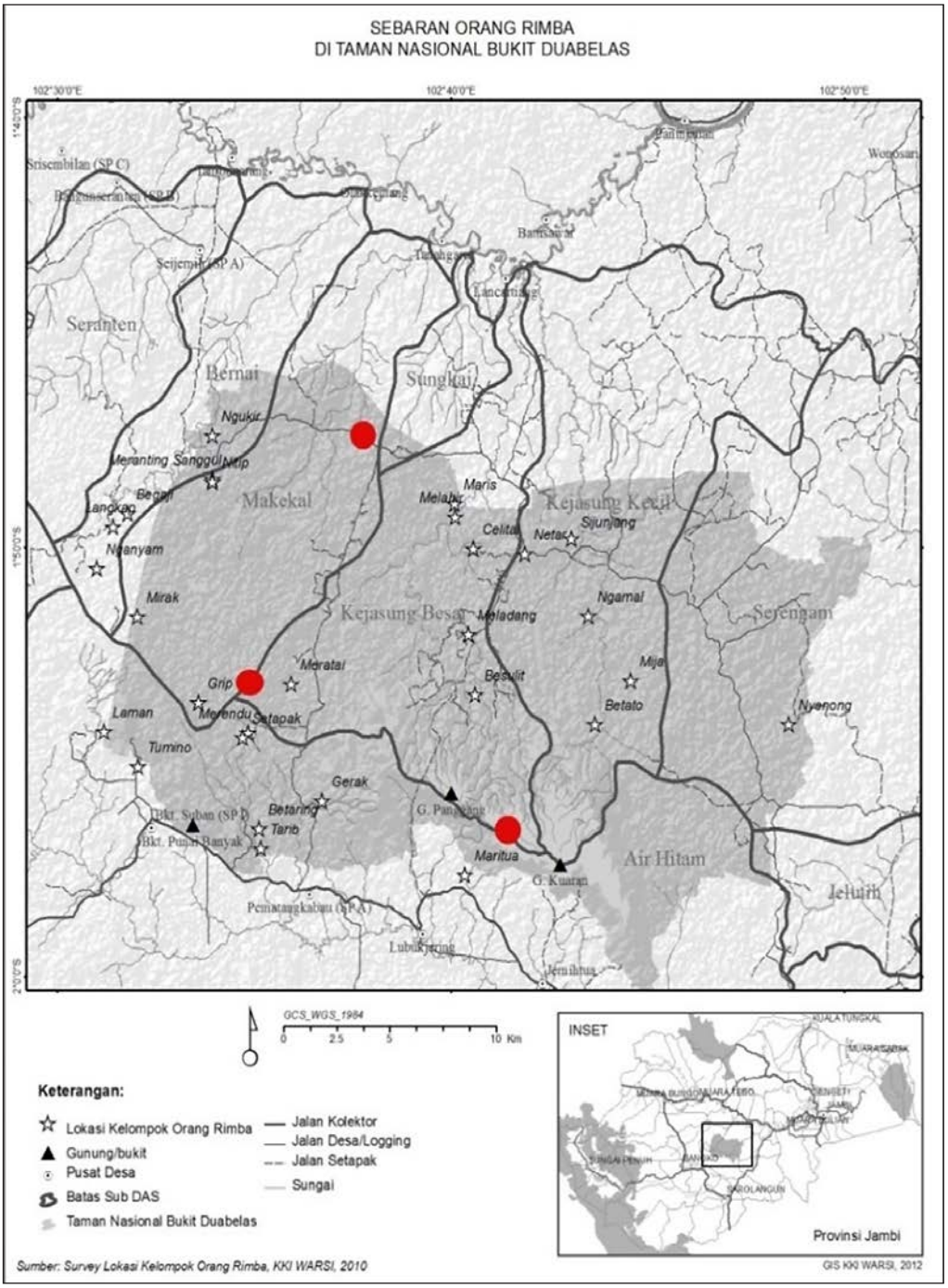

Figure 7. The riverine areas and group locations of the Orang Rimba in Bukit Duabelas
Notes: Source of map WARSI, 2012. The red dots represent the research sites of the author

variation in terms of livelihoods, mobility, dependence on the forest, and interconnections with the outside world. In order to gauge how these differences relate to food security, three groups were selected.

The Orang Rimba groups that are central to this study mainly live in an area that is crisscrossed by rivulets of the Batanghari River. They are surrounded by Malay people living along this river. Specifically, they live in the transition zone between the plains and the foot of the Bukit Barisan (Barisan Hills). From the main Batanghari River, the Orang Rimba follow the smaller watercourses of the Makekal, the Kejasung, the Terab and the Air Hitam. These smaller rivers have sub-branches, and these are the areas where the Orang Rimba live. However, in terms of formal administrative arrangements, the Orang Rimba live in the three districts of Merangin, Tebo, and Batanghari (Figure 7).

The three groups that I have studied represent three different geographical landscapes: inside, surrounding, and outside the Bukit Duabelas (see the red dots in Figure 7)[7]. Aside from location, these groups vary in terms of livelihood and settlement patterns, and this also reflects varying adjustments to recent developments among the Orang Rimba. The expectation from the selection of these three groups is to understand the vulnerabilities of various kinds of challenges, and also the coping mechanisms that the Orang Rimba have in terms of food insecurity, while living in different geographical landscapes both inside and outside the national park as well as in its border areas

I chose the Sako Tulang group to represent those Orang Rimba living outside the forest (Chapter III). They are the most 'settled' group as they are heavily involved in rubber farming. In spite of this, they still preserve their traditions, albeit in adaptive ways. For instance, this group still practices some hunting and gathering, as well as the *melangun* ritual, but all of these are adjusted in time and scale as a result of their high dependency on commercial agriculture.

The Terab group resides on the southern border of Bukit Duabelas. They are the most mobile group and represent the Orang Rimba who lead a nomadic lifestyle both in- and outside the park (Chapter IV). In spite of the many pressures on their livelihood, they have adopted a number of adaptation mechanisms to deal with forest degradation, the massive growth of plantations (both rubber and oil palm), and interaction with neighboring ethnic groups.

Finally, the Air Hitam group has settled along the Kedundung Muda River in the southwestern part of Bukit Duabelas (Chapter V). Living inside the Bukit Duabelas, they more or less maintain their traditional way of life, although they too, face several challenges in terms of their livelihood, such as the encroachment of the Bukit Duabelas Forest. Moreover, they gradually transform from being mobile to leading a semi-sedentary life focused on rubber-planting.

Fieldwork

In total, I spent about 21 months doing fieldwork in Jambi between 2012 and 2016. From June to October 2012 and in March 2013, I travelled around in the Bukit Duabelas area

[7] The map was produced in 2012 and reflects the situation of that year. By the time I conducted my fieldwork, the mobility of the Orang Rimba and the forest cover changed due to many factors.

to identify potential locations for my research and collect preliminary data on edible wild animals and plants. I visited many *tumenggung* (leaders) of the Orang Rimba from the western, southern, and eastern part of Bukit Duabelas. While during this explorative period I spent the most time with the Terab group, based on the preliminary data collected it was decided to do comparative research in the three groups mentioned above. After a stay in the Netherlands in late 2012 to process the initial data, I spent most of 2013 in the field and in Jambi city, with a short break in Yogyakarta in May and June due to a health problem. From July to October 2013, I divided my time between the Terab and Sako Tulang groups, with regular visits to Jambi city; spending two months with each group to collect daily food intake data. Subsequently, my field assistants (usually young Orang Rimba men) continued to record the daily intake data. In November 2013, I began the same exercise, also with the help of my field assistants, for the Air Hitam group. In January and February 2014, I travelled between the three sites, monitoring the data gathering process undertaken by my field assistants, and gathering additional information and updates on relevant events for each group. Subsequent field trips were made in August 2014, March 2015, and finally in May-June 2016, in order to confirm, complete, and update the data. The practical arrangement of my fieldwork was different for each group. During the beginning of my fieldwork among the Sako Tulang group, I used my own tent, which I constructed in the vicinity of my field assistant's house in Sako Tulang. After some time, I asked him to build a simple wooden house for my stay. He allowed me to stay in his house instead. During my stay in his home, I ate with the family. This made my data collection easier because I recorded the meals that I ate as well. However, for reasons of personal preference I limited myself to only eating fish, wild pig, and deer. I didn't eat other wild animals such as snakes, lizards, and turtles. My host seemed to understand this well and let me eat what I preferred to eat. Staying in the same house with my informant had both advantages and disadvantages. My proximity to the Orang Rimba also meant I was a witness to some internal (family) conflicts, something that I had not previously experienced, but that I had to face as part of my fieldwork.

In Terab, I initially stayed in the two-story wooden house that belongs to WARSI, and which serves as their field office. The ground floor is a communal space under the management of the Terab group and contains the kitchen and a meeting place. The second floor is multifunctional and acts as a study room for the children and a meeting room, and it provides a bedroom for WARSI's field staff. I could avail of the services and assistance of WARSI staff during my first fieldwork trip, but during subsequent fieldtrips I stayed with the Orang Rimba using the second floor of the WARSI house mainly as a rest area and for writing. During my later fieldwork in Terab, I followed the group's *melangun* movements. However, since Orang Rimba custom prescribes that outsiders are not to stay with them during *melangun* as they may bring sickness or bad luck, I stayed around 300 meters away in my own tent.

During my fieldwork among the Air Hitam group, I usually stayed either close to one of my key-informants' houses in my own tent or in a hut that belonged to WARSI near the Kedundung Muda River. The hut's location was beneficial to my research since the river plays a key role in daily activities like cooking, washing, and other domestic chores. At

night, the hut was usually full of people, including my key informants, discussing issues I wanted to learn about. Also, from time to time it was used as a school for children living inside Bukit Duabelas. Importantly, as the hut is located at the junction to the nearest village and market, it served as a transit area and take-off point for the Orang Rimba who transport their forest products to the markets. The busiest day was Tuesday, a market day. I also occasionally stayed in WARSI's field office in Air Hitam (Bukit Suban), which serves as a meeting place for the NGO and the Orang Rimba of Air Hitam.

The role that the *jenang* and *waris* (briefly patron and middleman, but see Chapter II) play among the Orang Rimba has been well documented (see Sandbukt 1984; Persoon 1989; Prasetijo 2007; Sager 2008; Wardani 2011). In my view, the roles that *jenang* and *waris* play today has been transformed and has wide-ranging functions. These individuals represent agents of change for the Orang Rimba. The middleman's role is still crucial, but has been modified so that it is no longer just about representing the economic interests of the Orang Rimba, but it is now also a force that underpins political and social changes. The middlemen are the intermediate persons for the Orang Rimba in terms of making contact with other parties such as government officials, plantation companies, NGOs, and other ethnic groups. Such a role can be played by students/researchers, government officials, *toke* (traders or middlemen), or NGOs. In some cases, Orang Rimba themselves have taken up that position. Despite the negative connotations associated with the role of *jenang/waris*, i.e. that middlemen are self-serving, the Orang Rimba need the *jenang/waris* as allies in order to protect their interests.[8] Both sides, the Orang Rimba and the current *jenang/waris*, have the ability to re-define their positions strategically.

I feel that, in addition to meeting the expectations of the main objective of doing research on food security among the Orang Rimba, I have also had a role as the Orang Rimba's *jenang/waris*. Initially, I did not realize that I had unintentionally taken up that role, but the intensity of my fieldwork with constant contacts with my informants catapulted me into that position. On many occasions, in addition to collecting data, I became involved in the groups' internal meetings to discuss their concerns and issues. Or I was called into meetings in Jakarta[9], and put in a position to speak about or even on behalf of the Orang Rimba with other parties. At times, I found myself involved in the Orang Rimba's trips to villages to buy groceries or to obtain medical services. On other occasions, I was involved in the process of selling their rubber or palm oil nuts to the middlemen. Often, other ethnic groups considered my position in the Orang Rimba group as somewhat awkward, especially as I was the only 'outsider' woman. One merchant seller in Pauh District once asked me whether I was the wife of one of the Orang Rimba men, since I always travelled with them. The fact that they always asked me to accompany them, especially when dealing with money (in most cases, buying things), showed the confidence they had in me while joining them, which enabled them to get better prices for their products and pay fair prices for their purchases from local markets.

[8] See the message sent out by the Tumenggung of the Terab group about his expectations of me in Chapter IV.

[9] In March and April 2015, *Lembaga Pengetahuan Indonesia* (LIPI, the Indonesian Institute of Sciences) and *Komisi Nasional Hak Asasi Manusia* (Komnas HAM, the National Commission for Human Rights of Republik Indonesia), invited me as resource person in discussing the case of 14 Orang Rimba who starved to death in early 2015.

This kind of relationship also enhanced my confidence in terms of collecting data. In addition to participatory observation, collecting quantitative data on daily food intake and interviewing informants through unstructured, semi-structured, and structured interviews, became more manageable.

The languages I used during my daily conversations with them included Indonesian (Bahasa Indonesia), Malay (Bahasa Melayu), and the language of the Orang Rimba (Bahasa Rimba, or Beso Rimba in local terms). My key informants were fluent in Bahasa Melayu and Bahasa Indonesia as they actively interact with middlemen and others from neighboring ethnic groups in trading activities. Some of them can speak Javanese, my own native language, rather well. Even though my ability to speak Bahasa Rimba was limited, I managed to understand what my informants were saying in general. Bahasa Rimba is very important in discussions and community meetings that involve members of the Orang Rimba groups. However, for one-on-one interviews, I often used Bahasa Melayu and Bahasa Indonesia, which have some overlap with Bahasa Rimba.

Time

In this dissertation, I use many words that relate to *the past* and to *the present* (nowadays). Measuring time is challenging for most Orang Rimba. This is because they do not have and do not use the concepts of year or age in their lives. For this study, however, I had to identify certain important dates and events in the life of the Orang Rimba.

My key informants always perceive the term *in the past* as a comparative term. For them, the term *in the past* reflects a situation when forests, the mainstay of their livelihood, were still verdant and expansive. Forest degradation began in the 1970s (see Prasetijo 2011), when the government of Indonesia launched a number of development and transmigration projects and granted logging concessions at a large scale. The idea at that time was to minimize the disparity and population gap between Java and other islands, including Sumatra, Kalimantan, Sulawesi, Papua, and other eastern islands in Indonesia (Levang 2005, see Chapter II for further detail).
Indeed, the 1970s was a watershed period in the Orang Rimba's transformation process. This decade marked the completion of the Trans Sumatra Highway, which created a window of opportunity for investments in Sumatra. The opening of the highway was followed by a large number of transmigration projects. Since then, the numbers of modern, capital-intensive industries on Sumatra have soared, dominated by a growth in the export of natural resources and agricultural products. During the 1990s, logging industries and cash crop plantations emerged all over the island, including in Jambi Province.

Thus, in this dissertation, *in the past* generally refers to the period before the 1970s. This is closely related to the Orang Rimba's use of the term *in the past* to reflect their previous life of abundant forests and relatively limited contact with outsiders.

In the timeframe that includes the opening of the Trans Sumatra Highway, the

transmigration projects, and the arrival of the logging industry, my own research started at the time when cash crop plantations reached their peak. I started my PhD research in 2012, when oil palm on large-scale plantations as well as in small-holder fields had already become the main source of income in Jambi. In addition, timber industrial estates were well-established. By then, the geographical landscape of Jambi had already been transformed and was largely covered by oil palm and rubber plantations.

Description of the data on food

I collected two main types of data on food, namely: a) qualitative data on the wild animals and plants consumed by the Orang Rimba; and b) quantitative data on daily food intake. Before describing both types of data and the way in which they were collected, I will first reflect on how I selected key informants and assistants to facilitate data collection.
In choosing my key informants in each group I used a purposive sampling technique. "The purposive sampling technique is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts. Purposive sampling may also be used with both qualitative and quantitative research techniques. The inherent bias of the method contributes to its efficiency, and the method stays robust even when tested against random probability sampling." (Tongco MDC 2007: 147). I have consulted with the Orang Rimba expert of WARSI and discussed the preliminary identification on the potential key informants and respondents in certain groups that could support the objective of my research. The main selection criteria included that key informants should have adequate knowledge of the Orang Rimba culture and its social dynamics; be able and comfortable to communicate with non-Orang Rimba; represent at least the variation of household income (high and low), and have mixed types of livelihoods; and finally, be somewhat literate.

Edible wild plants and animals

For the collection of data on edible wild animals and plants, I used structured interviews. This was a long process which involved many participants making lists of edible animals and plants. This was done separately in each location. My key informants, who participated in identifying the food, ranged from *rerayo* (the elders) and adults to youngsters. I conducted group interviews in which most of the informants were men, although a few women also participated. Usually around five up to ten people participated, even though additional people often joined the interviews passively. *Tumenggung* and other *rerayo* were particularly suitable for this purpose. Interviews were conducted in the evenings, when everybody was at home. The initial lists of edible plants and animals were compiled in Bahasa Rimba. With the help of a biologist from WARSI, in May-June 2016, I was able to confirm the data and to collect both the species names and the common Indonesian equivalents for many animals and plants on the lists. However, with respect to the many types of fish consumed, I was only able to collect the local names and failed to collect the scientific and common names as there was no expertise on fish identification available.

Daily food intake

Central to this dissertation is using daily food intake analysis. Studies on the anthropology

of food are taking food intake into consideration as one of the main issues (see Macbeth and MacClancy 2004). As summarized by Ulijaszek (2004: 121-122) there are four basic approaches, namely: diet record, diet recall, diet history, and food frequency questionnaire. There are advantages and disadvantages to each method, and which method is the best depends on the specific conditions and local situation (i.e. purpose of the study, field circumstances, availability of time, and financial resources).
I chose an approach that fits the purpose of my study, which is to obtain general insight in the daily consumption patterns of the Orang Rimba. I did not aim to quantify the nutrient intake or caloric values. Thus, based on this purpose and specific circumstances in the field, I developed a food intake method that is closely related to what Ulijaszek (2004: 122) calls 'estimated food record'. It involves a record of all food as eaten over a certain period. Each day, during each meal, I or my research assistants recorded all components of that meal based on interviews with and observations of the households involved in my study. In addition, for each food component, the origin was noted. For instance, it was noted whether the food item was obtained from hunting, fishing, or buying. I recorded this information based on a format used by the Food and Agriculture Organization of the United Nations (FAO), see Table 3. However, since I did not collect data on snacks, I simplified the format as in Table 4.

Table 3. Template used by the FAO (Kennedy, Ballard and Dop 2013: 7)

Breakfast	Snack	Lunch	Snack	Dinner	Snack

Table 4. Template used for daily food-intake records in this study

Date	Breakfast	Lunch	Dinner

For the purpose of analysis, the specific food items listed in the daily food intake records were re-grouped into larger categories. There are existing guidelines on food categorization. The most commonly used food categorization is developed by FAO in the context of the Household Dietary Diversity Score (HDDS). It consists of 12 food groups, namely: cereals, fish and seafood, roots and tubers, pulses/legumes/nuts, vegetables,

milk and milk products, fruits, oil/fats, meat/poultry and offal, sugar/honey, eggs, and miscellaneous (Swindale and Bilinsky 2006: 2).
In the context of Indonesia, the categorization of food is based on the one used by the *Badan Pusat Statistik* (BPS) or Statistics Indonesia. There are 14 groups in the categorization, namely: grains, tubers, fish, meat, eggs and milk, vegetables, beans, fruits, oil and fats, drinks, condiments, other consumption, ready to eat/instant food/drinks, and cigarettes (Kementerian Perdagangan 2013).
Based on the two categorizations by the FAO and BPS, I developed a categorization that fits with the food consumption patterns of the Orang Rimba. It consists of the following four categories:

1. Carbohydrate
2. Animal protein
3. Fruit
4. Vegetable

Each category has its own subcategories, as presented below.

Carbohydrate:

1. Rice
2. Cassava
3. Taro
4. Wild tuber and other starchy foods

Protein:

1. Fish
2. Wild pig
3. Freshwater turtle
4. Hedgehog
5. Snake
6. Deer
7. Mouse deer
8. Bird
9. Frog
10. Lizard
11. Squirrel
12. Rat
13. Primate
14. Other
15. Unknown
16. Combination of above

The total number of households to be included in my primary data collection for daily food intake was six households in three locations, or two in each location. I collected daily food intake records for 180 days for two households in Sako Tulang and also for two households in Air Hitam. In Terab I recorded daily food intake for 180 days for one household and for 60 days for another household. The food intake records for the two households in each

group were combined into one data set to provide an average for the group as a whole. The food intake records were taken three times a day for breakfast, lunch, and dinner. In case no meal was consumed during a particular moment, the food intake record would say "no meal consumed". But for the sake of readability, hereafter, I use the word "meal" for all (potential) moments of food intake, that is three times a day. This produced 1,080 (potential) food intake records in Sako Tulang, 360 records in Terab, and 1,080 records in Air Hitam. Together this adds up to 2,520 food intake records.
For further analysis, I made frequency distributions for every category and I plotted this output in graphs. Frequency distribution shows the percentage of the frequency at which the Orang Rimba consumed a specific food category. It also shows how often each category occurs in the diet. This analysis helped me to identify patterns in the kinds of food consumed by my informants as representatives of the group (see Chapters III-V).
The recording of the daily intake of the Sako Tulang group began on 16 July 2013 and ended on 15 December 2013.

I chose two key informants from the Sako Tulang group as the basis for collecting data on daily food intake at a household level, namely the son-in-law of the group's leader, who acted both as key informant and my field assistant. He is literate thanks to a WARSI education program and often accompanied me to other households and during trips through the forest or to their forest fields. Together, we have worked on updating a demographic survey of the group, an analysis family relation of the Sako Tulang group, a sketch of the settlements, and an overview of their livelihood. We have also worked on identifying the assets belonging to households in the group. The second key informant owned five hectares of immature rubber plantation. His main source of income is the renting out of his land to farmers from neighboring ethnic groups on a yearly basis, while he also occasionally works as a laborer in the rubber gardens of other people. In addition, he is involved in hunting activities to ensure adequate food for his household.
The data collection on daily food intake in the Terab group started on 1 September 2013 and ended on 28 February 2014, but differed for the two households because sadly, one of my respondents passed away in the middle of this period. Consequently, the comparative analysis of data from the Terab group is varied: based on a six-month period for one household and a two-month period for another (see Chapter IV for detailed explanation of the situation). The first key informant from Terab acts as a *menti*, the equivalent to a modern public relation's role, a social position associated with high status and a 'more stable' income. He is one of a few informants with a relatively high level of literacy. In addition to serving as one of my key informants, he played the role of my field assistant[10] in the Terab group. My late second key informant from Terab was a representative of the *rerayo*, or elderly, without a political position in the group. He also had limited capacity to earn an additional income due to his poor health.
Collection of daily food intake data in the Air Hitam group took place between November 2013 and April 2014. This period was chosen because it covered both the dry and the wet

[10] Before choosing him, I previously worked closely with the *Wakil Tumenggung* or Deputy of Chief. However, in the middle of my research, he and some other households moved away from the main location of the Terab group. Even though he was still a key informant, he was excluded from the sample households for recording the daily food intake.

season. The two informants from whose households I collected daily food intake data in Air Hitam were both considered *rerayo* and they were well acquainted with the Orang Rimba customs. While one of them held an important political position as a *mangku*, a person who is in charge of custom- related issues, the other held no political position within the group. At this location, I hired three young men to act as my field assistants in recording the daily food intake data and interviewing, my main assistant being the son of the above-mentioned *mangku*. Additional assistants helped as porters, since the site was inside the forest and only accessible on foot; and with routine tasks such as cooking, collecting firewood, and drawing water from the river, as well as driving me to and from the village of S.P.I. by motorcycle.

In addition to the daily food intake data, I also conducted interviews with the Orang Rimba in the three locations on the edible plants and animals during my fieldwork period of 2013-2014. In that period, however, I only managed to collect the local names of the plants and animals. In 2016, with the help of a biologist from WARSI, I continued to collect information and I was able to verify the names in Bahasa Indonesia and the species (Latin) names. The detailed list on the edible plants and animals for the Orang Rimba based on their knowledge, regardless for consumption or otherwise, is provided in the annexes.

Studying food security in a certain community calls for observation of several elements, which are illustrated in the table below. The table was developed based on the references from Maxwell (1996) and OXFAM (2001), and adjusted by the author to fit in the context of the Orang Rimba.

Table 5. Indicators of food security

Elements of food security	Key Areas
Food availability	Food supply: Own production (through subsistence farming, for example) Hunting Gathering Buying Given (sharing and receiving)
Access	Control over land Household income
Vulnerability	Various pressures to forests Melangun traditions Other shocks: price volatility on the livelihood products (rubber, oil palm and other NTFPs) seasonal changes health condition across the seasons hunger concept
Sustainability	Coping strategies during crisis The role of aid programs from outside sources

The four elements and their key areas will be examined further in the analysis in Chapter VI to determine the Orang Rimba's food security status. In addition, the analysis is supported by the daily food intake data to document the food consumption trends among the Orang Rimba.

1.6 Limitations of the study

I am aware of the potential bias of the techniques used, and by using a combination of approaches I have attempted to minimize biases. However, limitations evidently remain. For instance, the daily diet records do not cover food from the forest or from other sources that is consumed as snacks (i.e. in between meals) because this happens outside the house. It is quite likely that 'snacking' forms a substantial part of diets, including that of children. This difficulty has also been noted in other diet studies on forest-dependent peoples which probably leads to an underestimation of forest food consumed on gathering and hunting trips (e.g. Rowland et al. 2016: 11; Kelly 2013: 65), but also of snacks consumed when visiting the market or shop.

In addition to eating, food security is also partly shaped by drinking. Indeed, food is defined as "any substance that people eat and drink to maintain life and growth" (Gross, Schoeneberger, Pfeifer, and Preuss 2000: 4). The amounts and types of drinks consumed are however not part of the analysis.

As regards fruits and vegetables, there are two main discussions about these two categories. First, the Orang Rimba rarely eat vegetables. In fact, their daily diet contains more meat than vegetables. Given the fact that the Orang Rimba often consume meat, it can be stated that their diet contains sufficient animal protein. To a lesser extent, however, the Orang Rimba have small home gardens in which they can grow cassava to add to their diet. Second, culturally the Orang Rimba consider fruits to be an important element in their food supply. In the past, the Orang Rimba supplemented tubers as their main diet with fruits, honey, wild animals, and other types of food they collected from the forest, albeit temporary. This is why the Orang Rimba classified seasons in their lives into several events (see Chapter II for more details). The consumption of fruits was relatively limited during my fieldwork due to the absence of a fruit season. In addition, the number of households may be relatively small. However, the level of detail may give clear indications and allows us to portray the food security situation of the Orang Rimba in a general way. As Laksono writes, "Findings in ethnographic research are not positioned to represent the problems faced by the communities in general since there are many internal differences. Ethnographic writings are a representation of what the researcher sees, hears, and feels when having interactions with local people so that the researcher's subjectivity cannot be avoided. Therefore, as a reflection, ethnographic research is not intended to make research of right and wrong or past mistakes but it is intended as an alternative to move forward towards positive change." (Laksono 2012: 3).

This dissertation intends to describe the current situation of food security status of the Orang Rimba on the basis of a limited number of resource persons alongside with the limited time spent during the research exercise, with the hope that the lessons learned from this dissertation may contribute to the current debate of food security status of

hunter-gatherer societies in a wider sense. Through the lens of food security, it is hoped that the dissertation can reflect the transformation process of the Orang Rimba in the current situation. Later on, the lessons learned can contribute to the recommendations on the way forward for hunter-gatherers, not only for the Orang Rimba but also elsewhere.

1.7 Ethical considerations

Doing research among the Orang Rimba was quite challenging. On the one hand, the Orang Rimba have their own traditions and culture which are quite different from other cultures in Indonesia. On the other hand, the Orang Rimba are also known to be a relatively "closed" community. It is not easy for outsiders to enter their lives. On the basis of my previous experiences with the Orang Rimba, I was able to make close contact with them as well as with WARSI. In addition, I have also worked towards fulfilling the requirements for obtaining the free, prior, and informed consent (FPIC) of the people involved (see Persoon and Minter 2011). For example, I have discussed my proposal and my research aims with the *tumenggung* at the beginning of my fieldwork. The same actions were also conducted individually with the households. With the assistance from WARSI, I visited groups of the Orang Rimba in TNBD to seek their permission as well as to explain the anticipated outcome and outputs of my PhD research. This included the potential risks and benefits for the Orang Rimba as well. One important aspect of these discussions was the expectation that my research could bring real benefits to the Orang Rimba. I have tried to inform the Orang Rimba as realistically as possible about this in order to avoid the risk of disappointment at a later stage.

Researchers, both international as well as national, who want to conduct research in Indonesia should also obtain research permits from various authorities (national as well as provincial, and local). Since my fieldwork sites were mostly inside or near the national park, I had to arrange a research permit from the Provincial Office of Bukit Dua Belas National Park. I managed to arrange this permit annually thanks to the full support of WARSI.

It was challenging to conduct research on food security among the Orang Rimba since they have a tendency to share whatever they have. Sharing is a key characteristic of their social life. I shared my concerns with the late *tumenggung* in Terab and he understood me well. For this reason, my assistants helped me to explain that I could only share my meals with the children that accompanied me during my stay in their group and these children were not my respondents' family members. I also did not bring types of food with which the Orang Rimba were not familiar, nor did I bring types of food that they consider forbidden to eat. Only once in a while, when I got back from Jambi, I brought small souvenirs for my key informants, mostly cloth or *kain*. In Sako Tulang, since I practically ate with my assistant's family, I followed their diet. I only brought limited amounts of rice, which was also part of their regular diet. In Kedundung Muda, I did share food with my field assistants, but not with the households that were involved in the daily food intake records. However, since serving coffee, tea, or snacks when people pay a visit in Indonesia is a sign of hospitality that cannot be avoided, there were moments when I did so when the Orang Rimba visited me.

In order to compensate for the time and efforts of my field assistants and the households involved in the daily food intake records, I did pay them. To measure the impact of this additional income in terms of their food intake was quite difficult for me. Most or all of my field assistants already have a relatively stable income not only from the products harvested from the forest or from their small plantations but also from external parties such as logging or plantation companies, NGOs, and other stakeholders.

An Orang Rimba man in Sako Tulang is taking a rest after working on his rubber plantation. 2013

II The Orang Rimba In An Interconnected World

"*Beratap cikai,*
bedinding bener,
bertikar gambut,
berayam kuo,
berkambing kijang,
berkerbau pada tuno."
(Tengganai Ngembar[11] 2007[12]).

(Living under a roof made of *cikai* leaves,
walls constructed from roots and tree bark,
swathed by mud, decorated by peacocks,
keeping deer instead of goats,
keeping tapir instead of buffalo,
all of which are given by the forest.)

2.1 Introduction: President Jokowi visits the Orang Rimba

It was during my writing time spent in the Netherlands that mainstream and social media broadcast extensively the visit that Indonesian President Jokowi paid to the Orang Rimba on 30 October 2015. My inbox was replete with emails and Facebook news feeds from my friends and colleagues, who sent messages and questions about the controversy of Jokowi's visit to Bukit Suban, a home for the Orang Rimba in the southern part of Taman Nasional Bukit Duabelas (TNBD) and, coincidentally, one of my fieldwork locations. The media coverage of the visit included pictures of Jokowi crouching down in an oil palm plantation as he talked with a group of Orang Rimba dressed only in loincloths.[13]

[11] The only native history teller who was still alive at that moment, living in the Air Hitam area, the southern part of Bukit Duabelas national park of Jambi.

[12] Between 2006 and early 2008 I conducted a comparative study on food security among Orang Rimba in two locations, in Taman Nasional Bukit Duabelas (TNBD) and Pamenang District (alongside Sumatra Highway). The interview from which this oath was recorded, was conducted with Tengganai Ngembar (80 years old) and other *tumenggung* (leaders) in TNBD in September 2007.

[13] There are those who believe this was propaganda on Jokowi's part and that the pictures were staged with the aim of increasing Jokowi' popularity by showing the world that he cares for all his people, including *masyarakat adat* or indigenous peoples such as the Orang Rimba. According to them, the Orang Rimba were asked to wear the loincloths for the meeting with Jokowi, despite the fact that they no longer wear loincloths in their daily lives. The Orang Rimba were also ordered, the conspiracy theory continues, to act like "native and primitive" peoples. According to the presidential office, however, the visit was not a set-up and the Orang Rimba were not given orders to dress in traditional attire.

Such images of a high-profile person talking to common customary and native peoples are rare in Indonesia. Typically, *masyarakat adat* or indigenous peoples have been neglected by the state since Indonesia gained its independence. The general view of the state and the mainstream population is that *masyarakat adat* are seen as *terbelakang* (backwards) and *tertinggal* (underdeveloped). There is almost no space for indigenous peoples to participate in the development process, as they lack the necessary connections to authority and power. Indeed, the state considers these peoples a burden to the development process, a way of thinking that has led to many efforts to try to either assimilate or integrate *masyarakat adat* into mainstream society.

Jokowi was the first president of Indonesia to pay a visit and talk face to face with the Orang Rimba in their home territory. The last president to show any serious concern for the Orang Rimba was President Abdul Rahman Wahid, popularly known as Gus Dur. He ordered the conversion of the degraded Bukit Duabelas forests into a national park in 2000 (see section 2.8). However, Gus Dur never visited the Orang Rimba, despite a stopover in Jambi city. Thus, although Gus Dur contributed much to improving the conditions for the Orang Rimba, he did not engage with them directly.
On his official Twitter account, Jokowi tweeted several hours after the photos went viral on social media using 'Jkw', showing that it was actually him and not his public relations'

Figure 8. Jokowi meets the Orang Rimba under a shelter in an oil palm plantation near Bukit Suban, October 2015
Source: kompasiana 2015, https://www.kompasiana.com/nmala/563b1bd4509373d00803168b/kenapa-jokowi-ketemu-suku-anak-dalam-di-kebun-sawit?page=all

officers tweeting. The tweet, posted together with the picture of him squatting as he talked with the Orang Rimba, said:
"*Suku Anak Dalam adalah bagian dari kita. Mereka memerlukan ruang hidup yang layak* - Jkw"
meaning
"Suku Anak Dalam people are part of us. They need a decent living space - Jkw".

The government (especially the central government, through its Ministry of Social Affairs) has made various attempts at persuading the Orang Rimba to live like the Orang Melayu, the majority population in Jambi province. The government has its own term for the indigenous peoples in general, for what are known as 'isolated or remote customary communities'. Specifically for the Orang Rimba and other minority groups in Jambi, the government created the term Suku Anak Dalam in the 1960s. This was a new term for those indigenous peoples that had to be included in various government programs, especially the resettlement programs. This term is used up to this day by the government, especially for official purposes.
For a long time, *masyarakat adat* has been portrayed as "estranged, isolated, and backward" societies, with little if any assistance from the government. The government considers their non-sedentary lifestyles to be primitive. To that end, many efforts have been made to persuade them to leave the "abnormal" lives they lead and to integrate into "normal" society. Such efforts often took the form of resettlement programs. These programs included the provision of new housing, proselytization to convert to certain religious affiliations professed to by the mainstream population, dressing the way mainstream society does, undergoing formal education, and enhancing access to various public facilities. Not surprisingly, the orientation of such programs has largely been tailored towards enhancing uniformity with respect to traditional lifestyles, typified by dances and songs, at the expense of indigenous diversity (see Li 2002). No wonder, then, that the pictures of Jokowi squatting down with the Orang Rimba under the oil palms attracted a lot of public controversy and interest.
As part of his visit, Jokowi proposed to the Orang Rimba that they should become sedentary and move to permanent houses in a resettlement area. According to Jokowi, the Orang Rimba agreed to his proposal. However, the offer appeared to be a repetition of old failed proposals that are aimed at "controlling" *masyarakat adat* in Indonesia, including the Orang Rimba.
This chapter primarily discusses the ethnography of the Orang Rimba in general. It examines the Orang Rimba's present-day situation with respect to livelihoods, material, and non-material culture. It also addresses their social, economic, and cultural interconnection with the outside world. This includes relations with the government (and its development agenda), other ethnic groups, and market-based actors (plantation companies and so on). Some of the examples are the visit of Jokowi in 2015, the roles/influences of non-governmental organizations (NGOs), media, individuals, and other relevant stakeholders in the life of the Orang Rimba. In addition, this chapter provides the description of the designation of the Bukit Duabelas area as a national park, various state projects, and government efforts to resettle the Orang Rimba.

2.2 Historical background

One of the basic foundations of the Orang Rimba is expressed in the poem mentioned in the beginning of this chapter. The underlying message of the poem is that the forest is the provider of everything. The Orang Rimba's nomadic way of life is partly shaped by their use of natural resources, which are widely spread. Mobility is also driven by pressure from outsiders and the need to perform *melangun* (a period of mourning) whenever a person has died in their community.

To date, there has been no consistent research that confirms the origins of the Orang Rimba beyond doubt. If we look at the customs, the traditional technology, and the language of the Orang Rimba, it is obvious that they share a lot of similarities with the people of Jambi in general, but at the same time their hunting and gathering mode of living, their cosmology, their food taboos, and the practice of *melangun* sets them apart from neighboring groups. The article '*Mereka ingin mengubur Kubu*' ('Those who want to bury Kubu'), published in *Kompas*, describes the history of the Orang Rimba as something full of mystery (Kompas 17 April 2007).

Indeed, there are multiple versions of the Orang Rimba's history. For instance, the Orang Rimba who live in the Air Hitam area told me that they are natives of Jambi, who, during the Dutch colonial era, survived by living in the forests. At the time, Jambi was under the rule of the Sultan Thaha. This scenario would support the idea that the Orang Rimba are indeed secondary hunter-gatherers (see section 1.3), who may have retreated from power centers and resorted to hunting and gathering as a consequence.

The Orang Rimba who live in the Makekal River told me about a myth that says that they originate from a fruit named *Kelumpang*, which reincarnated into a woman who married a man from the Minangkabau who lived there and who was nicknamed *Bujang Perantau* (literally means wandering bachelor). Some of their descendants lived in Desa Tanah Garo, known as *Pangkal Waris*. According to the Orang Rimba in Makekal, the border between the Orang Rimba neighborhood and that of the Tanah Garo was determined by Sultan Thaha. The Sultan determined the boundaries to correspond with several rivers in the Bukit Dua Belas area.

Given the wide range of variations on the history of the Orang Rimba, my research follows the versions told by the Orang Rimba based on their customs and traditions. Some of them are reflected in the poems and myths following their origins and uniqueness that are still adopted up to date.

2.3 Ethnographic literature on the Orang Rimba

The old and recent literature on the Orang Rimba is quite extensive taking into account the size of this ethnic group. Since the appearance of the early reports about 'the wild Kubu' (as they were then called), dating back to the early decades of the 20th century, colonial ethnographers and civil servants have taken a serious interest in this nomadic group of hunter-gatherers. The Orang Rimba were commonly known as the Orang Kubu, which is associated with being dirty, vile, smelly, stinky, wild, and other negative images. Their modes of living, their simple forms of religion, and the 'silent trade' with the neighboring

Figure 9. Wild Kubu Tribe, Air Hitam Jambi
Source: Picture by Waterschoot van der Gracht (1915), with his original caption

Malay people were of particular interest because ethnographers thought that they had found an ethnic group that was living, as it was called at that time, 'at the bottom of civilization'. They were thought to be among the most primitive tribes that were still to be found on earth. In particular the articles by Van Dongen (1913), the monograph of Hagen (1908), and the articles by Volz (1909), and others strongly stimulated the interest of ethnographers and anthropologists interested in cultural evolution. Some of these writings, like those of Hagen and Visser (1939), as well as Van Waterschoot van der Gracht (1915) also had illustrations of the Kubu.

One of the interesting publications from this period is a short article by the mining engineer Van Waterschoot van der Gracht (1915), which also includes a few pictures. In November 1913 he was sent out to the Bukit Duabelas area to explore whether there were exploitable oil fields. He described the area as a dense jungle with paths made by elephants. But it was also the home territory of about 400 'wild Kubu' who were still living in 'the original wild state'. He described their simple huts, and what the people looked like, how they were dressed and what types of weapons they had. Because these people are the direct ancestors of the Orang Rimba that I studied, it is also interesting to mention here what he wrote about their food. Their staple food consisted of all kinds of wild tubers

of which he mentioned *banar, djangeh, koesoet* and *gdoeng.* Two types of water snails were collected: *tenkoejoeng* and *kalamboeai*. Wild pigs, porcupines, and various types of monkeys were the main game animals. Fish was caught with the help of poisonous roots. In addition, he also mentioned snakes, frogs, toads, and the rather big tortoises. From the *sialang* trees the people collected honey. The people were eager to receive rice but, according to Waterschoot van der Gracht, this was a luxury product which they usually only obtained through exchange trade.

According to Sager (2008), the Orang Rimba became of interest to anthropology because of their traditional non-Islamic religion and their ritual practices, which are oriented towards the seasonal cycles of rain, fruits, honey, and the migration of bearded pigs. The first ethnographic notes described them as the Orang Kubu (or Koeboe), which was used as a generic term for traditional ethnic groups in Central Sumatra. As noted by Persoon (1994: 135), the term Kubu itself reflects how the outside world viewed them as hiding from society at large (*mengubukan diri* means 'to hide oneself from other people'). They were described as a group which was able to survive in their environment with almost no need to interact with the outside world (see Weintre 2003). In the early twentieth century, Van Dongen's publications (in Weintre 2003:29-39) became the most extensive first-hand account of the Orang Rimba. Van Dongen (in Weintre 2003) gave an extensive account of the Orang Rimba and described in detail their economy, social beliefs, life-stage rituals, conceptions of the soul, and prayer songs sung during healing ceremonies. In an article titled *´Kubu Conceptions of Reality´*, the Norwegian anthropologist Sandbukt (1984) describes some of the forest–village divisions inherent in the Orang Rimba cosmology and religious beliefs; and gives a general outline of some of their gods, rituals, and shamanistic practices. The Dutch anthropologist Persoon published various articles on the Orang Rimba in the 1980s and 1990s, and devoted an extensive part of his dissertation to this ethnic group (1994). On the basis of visits to different camps throughout the region, he gives a general overview of Orang Rimba life and explores some of the effects of logging, establishment of plantations, resettlement projects, and an encroaching outside world on the Orang Rimba's way of life (1989, 1994, 2000).
Since Sandbukt and Persoon, the Indonesian anthropologist Muntholib Soetomo has performed doctoral fieldwork with the downstream Makekal Orang Rimba in Bukit Duabelas (see Soetomo 1995). Soetomo's thesis gives a very general and broad account of the Orang Rimba life, which is limited in many respects, but contains a great deal of interesting data on the Orang Rimba *adat* (customary) and legal codes. Elkholy, an American anthropologist, spent 20 months conducting doctoral fieldwork in the buffer zone of Bukit Tigapuluh National Park in the mid-1990s. Elkholy studied the Orang Rimba from an ecological-anthropological perspective that incorporated a phenomenological approach. The field study was done among the Orang Rimba living alongside the Gelumpang and Kemumu rivers, on the Bukit Tigapuluh border, in the northern part of Jambi. His monograph is one of several more recent publications on contemporary perspectives of the Orang Rimba that have become available (see Wardani 2007, 2011; Prasetijo 2011, 2015, Elkholy 2016; Persoon and Wardani 2017).
Mention must also be made of the research that was done within the framework of policy studies in preparation of development projects, such as the resettlement villages.

In particular the Department of Social Affairs has published a large number of studies that describe the conditions in which the Orang Rimba live. The outcome of such studies was used as a justification to start development activities among them in order to improve their situation in terms of health care, education, and modes of livelihood. The focus of these development activities was always aimed at the resettlement villages in which the Orang Rimba were supposed to start their new way of life as mainstream Indonesians. Such studies have been made since the 1960s (Departemen Sosial 1980, 1985, 1998a, 1998b).
One of the topics that appears in all ethnographic writings of the Orang Rimba, and that also has a large impact of the efforts to resettle them, is the tradition of *melangun* (see for instance Sandbukt 1984, Persoon 1994, Depsos 1991, 1993, and Sager 2006). *Melangun* is a mourning ritual that involves not just indulging in sorrow, but also making efforts to forget any misfortune or bad memories associated with the deceased. The ritual involves leaving the location that used to be the dwelling place and going to a faraway location as well as engaging in a merry-making activity that is aimed at enabling those still alive to erase their memories about the deceased. While practicing *melangun*, the Orang Rimba, especially the women, literally cry loudly for a few days. The local term for this is *meratop*. *Meratop* is a symbolic event marking the climax of the mourners letting go of the person who has passed away.[14]

Moreover, *melangun* is not just a ritual designed to break any emotional bonds with the deceased forever, it is also about creating a new social balance within the group. *Melangun* reflects the need for access to resources that sustain livelihoods. Wandering from one location to another has been a way for the Orang Rimba to guarantee access to adequate basic needs, especially in terms of economic benefits. Staying together for a long period increases the possibility of internal conflicts due to resource constraints. In addition, from a cultural identity point of view, this symbolic action affirms the autonomy of the Orang Rimba in relation to other societies.

The Orang Rimba population was not always as widely dispersed as it is now. In the past, when the forest was still unlogged, it was concentrated along the river basins of Air Hitam, Serenggam, Kejasung Kecil, Kejasung Besar, Makekal, Bernai, and Seranten, with the highest density in the area of the Makekal River Basin. Over time, however, and especially since the 2000s, the population has spread out to several areas as a consequence of illegal logging and land conversion. Today, massive penetration of forests is attributable to land-grabbing by transmigrants from Desa Rantau Limau Manis, Sei Jernih, Dusun Olak Kemang, Jernih, Dusun Baru, and Desa Lubuk Jering, as well as penetration by transmigrants in secondary forestry. In that sense, mobility of people of various river basins has become more common; indeed, one can say it is essential to the survival of the Orang Rimba.

The *tumenggung*, or the leader, is the person responsible for the movement of the group. However, sometimes the decision to move is influenced by the interests of the households

[14] *Melangun* is based on a fear for the dead among the Orang Rimba. As such it is certainly not a unique phenomenon. It is found among many other hunting and gathering communities but also among other types of societies. James Frazer (1933) has written extensively about the religious practices related to this fear for the dead.

and the dynamics of the relationships within the group (birth, marriage, death, or conflict). If staying in the same area as a group is seen as advantageous, they will stay together, and vice versa. In the case of *melangun*, for instance, the decision to move to another location or to leave the group is based on the decisions made by the women grieving in the group, i.e. a mother, a grandmother, a daughter, a sister, or a granddaughter. The males in the house often follow the women in their mourning and, in this process, they try to meet their needs as women occupy a very high and special position in the Orang Rimba social community. The general picture that emerges from this anthropological research is that the Orang Rimba live together in small groups that are formed from marital relationships and bloodline relationships in a matrilineal system. Their law system and social organization are different from those observed in the neighboring communities of predominantly Malay people. The livelihood of the Orang Rimba consists of hunting and gathering (with a little farming) to meet the subsistence needs of family units and groups. Forest degradation has had a substantial impact on the lives of the Orang Rimba. Given the ongoing expansion of rubber and oil palm plantations, forest degradation and deforestation will continue and may force the Orang Rimba to "get out from their hiding place". Hence, interaction with the outside world has become inevitable and will continue to increase in the future.

In the remaining part of this chapter, I will give a general overview of the conditions of the Orang Rimba in the Bukit Duabelas area as I have observed them during my fieldwork. Whenever relevant I will refer to relevant literature, but most of the descriptions are based on first-hand observations and interviews with the Orang Rimba, Malay informants, and staff members of NGOs. More specific details of each of the three groups that I studied will be given in Chapters III-IV.

2.4 Present-day living conditions of the Orang Rimba

Mobility and livelihood

The Orang Rimba live in groups ranging between five and twenty households. They see a small number of people as a means of stability and as a way to reduce the potential for internal conflicts, which are likely to increase as natural resources decline. Moreover, small groups suit the flexibility and fluidity required to maintain the *melangun* tradition.

The influx of migrants into the areas that the Orang Rimba used to call their ancestral home, has substantially modified their geographical landscape. Subsequent logging activities, legal and illegal alike, and the worsening forest degradation and decimation of biodiversity, have reduced the Orang Rimba's access to forest-based economic resources. To supplement these decreasing economic resources, the Orang Rimba have been forced to adjust their way of living. This has included, among other things, attempts to lead increasingly sedentary lives by cultivating rice and planting rubber seedlings.

While the Orang Rimba have maintained the norms and taboos inherited from their ancestors, interaction with other ethnic groups has also induced adoption of some 'outsider' norms and practices. The Orang Rimba have come to realize that they are not the only society that inhabits the vast terrain, but one among many and with ever

Figure 10. The Orang Rimba of Air Hitam on the way to SPI carrying rattan to sell, 2015

decreasing influence. Consequently, the Orang Rimba have grown accustomed to using money, clothes, mobile phones, motorbikes, growing rubber and oil palms, and eating rice. Despite such changes, they continue to uphold to some extent their traditional norms and taboos, which characterize their daily lives.

Although hunting and gathering are main sources of livelihood for most Orang Rimba groups, some of them have established small fields planted with rubber trees and other crops. While there has been little research so far on the farming activities of the Orang Rimba, farming appears to have become an increasingly important part of their lives over time. This is reflected in the taboos the Orang Rimba have with regard to farming. A fitting example involves the rituals called *kendawan balau* and *pago balau* that, according to my informants, were inherited from past generations. These two rituals involve the utterance of mantras or prayers in order to ward off pests and diseases that cause harm to crops.

Farming practices help the Orang Rimba to fulfill their daily food needs in terms of tubers like *gadung*, and *ubi junjung*, but also cassava, plantains, sugar cane, chili, and other traditional food. In addition, they have gained experience in growing upland rice, a

Figure 11. Orang Rimba compound in oil palm plantation, Tanah Garo, 2013
Source: KKI WARSI collection

practice learned from the transmigrants since the 1980s. While some Orang Rimba have experimented with making rice paddies, this did not last, because they found the process of rice cultivation too labor-intensive and troublesome. Today, many Orang Rimba rely on rubber plantations as a supplementary source of income.
Currently, there are a number of Orang Rimba who have settled down, while others still live a rather mobile life. They shift from one forest field to another every few years. The shift usually reflects various socio-political and economic conditions that lead to fusion and fission of groups. Some examples of reasons to move away from groups and merge with others are tensions caused when some group members want to confirm their relationship with other groups, the need to redistribute population in relation to resources, or the need to consolidate rights to resources in a certain location. In addition, there are also short-term shifts by nuclear families for economic and social reasons.

Hunting and fishing
Hunting and fishing are important activities for the procurement of food for the Orang Rimba. They hunt animals like mouse deer, deer, wild pig, tapir, squirrel, freshwater turtle, snake, and antelope. Hunting provides a vital source of animal protein, and the sharing of hunting proceeds is an important social strategy to prevent food shortage.
Hunting is exclusively a male job, in which no participation of women is accepted. It is done by an individual, as well as by small groups of individuals. Hunting activities often involve members of one nuclear family or other close relatives. Hunting must follow the traditional rules and customs such as the rule that all hunters must be "clean", which means free from *denda adat* or custom fines. It must be noted that hunting not only

Figure 12. An Orang Rimba boy returns home bringing some squirrels, Pengelaworon group, 2014

Figure 13. The *labi-labi* (freshwater turtle) is being cut and divided by an Orang Rimba woman, Pengelaworon group, 2014

serves as a source of food but also as an initiation into adulthood for men. That is, an Orang Rimba man will be recognized as an adult after he succeeds in bringing home his first substantial catch.

Hunting proceeds from a communal hunting exercise are divided to be shared collectively by the female relatives of the hunters. This shows the authority of the female's position in the household as a decision-maker and a distributor of the game and reflects women's importance in the community. Hunting proceeds made by a single household are also shared with others, including members outside the group if the quantity warrants it.

In addition to the importance of hunting as a source of food, the Orang Rimba also sell the meat they hunt to middlemen in villages or to plantation officers. During my fieldwork, wild pig meat fetched an average price of Rp 4,000.00 (US$ 0.33) per kg, and usually comprised the lower parts of the pig's body without the head, offal, and limbs. Other types of bush meat fetched higher prices. For instance, deer was sold at IDR 70,000/kg (US$ 5.26/kg) and hedgehog for IDR 50,000/kg (US$ 3.76/kg).

One hunting expedition can produce roughly 40 kg of wild pig per person/group, but hunting yields vary depending on the season, location, human skills, and equipment/tools. Hunting is not done every day. It rather depends on the season and on the needs to earn

Figure 14.1 and 14.2. The Orang Rimba is taking a rest in the house of a middleman after selling a wild pig (left) and the Orang Rimba carrying a wild pig (right), 2006

money. Hunting is best in the rainy season and is done both in primary and secondary or logged-over forest, as well as in rubber and oil palm plantations, where wild pig is particularly abundant.

Previously hunting tools were limited to machetes[15], knives, and spears (*kujur* in the Orang Rimba language, which are still used by some hunters in Makekal Hulu), but most other Orang Rimba groups use a *kecepek*[16]. The introduction of this simple shotgun has allowed the Orang Rimba to also hunt other animals such as monkeys. These animals were extremely difficult to catch with their traditional tools as they usually stay in the canopy of the forest.

[15] All the iron parts of the tools are bought in the nearest markets/shops because the Orang Rimba do not produce iron tools. Machetes and knifes are the most commonly used tools. The Orang Rimba use 30-40 cm long machetes, which they store in their loincloths in the side of the waist. Machetes are used for many purposes such as cutting down small trees, cutting meat and fruits, for collecting non-timber forest products, and for uprooting wild tubers.

[16] *Kecepek* is a handmade gun for hunting animals such as wild pig, deer, and other mammals. It is bought from the local market. It is against Indonesian law to carry weapons without sheaths, but somehow the Orang Rimba have some privileges in this regard and may do so on special occasions like hunting. There are almost no reports of the misuse of weapons by the Orang Rimba with respect to the wider public. I only know of one accident happening during my fieldwork, which led to the death of an Orang Rimba youth in the Makekal Hilir area in December 2013.

Figure 15. An Orang Rimba man in Pamenang holding a *kecepek* (2006)

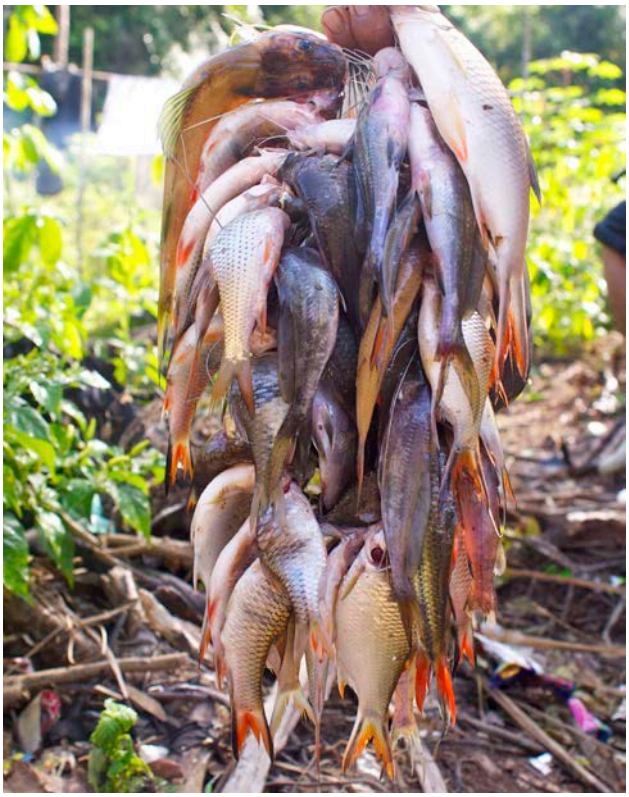

Figure 16. One-night fishing catch from Makekal River, Sako Tulang group (2013)

Figure 17. An Orang Rimba man sets up a net of fishing in Makekal River (2013)

Besides hunting tools, dogs are also used to assist the Orang Rimba in tracing animals such as wild pigs. The dogs make a small circle around the animal, after which the hunter can kill the animal with his spear. What is remarkable about the hunting tools of the Orang Rimba in comparison with other groups of hunter-gatherers is the absence of weapons like the bow-and-arrow or the blow pipe.
While hunters may also use snares and traps to catch small animals (like rats), traps are more commonly used in fishing to catch freshwater fish, freshwater turtles, and tortoises in dry riverbeds. Fishing is also done with the use of fishnets. The result of fishing is usually only sufficient to feed one household. The Orang Rimba fish mainly in the dry season and shallow riverbeds are the most important fishing sites. They also catch freshwater turtle or frogs from muddy parts of these riverbeds.

The most commonly used fishing technique used consists of net fishing in a downstream part of the river. The nets are laid out in the evening to catch the fish during nighttime. The fish are picked up in the morning. The efficiency of this method is limited; only small and medium-sized fish are caught. Moreover, this technique is only effective in slowly flowing and shallow streams.

Another fishing technique is the use of *tuba* or natural poison, taken from a variety of forest plants. This technique is locally called *menuba*. It is done in the dry season when the river is very shallow. There are many types of *tuba* which are derived from the sap

Figure 18. *Menuba* by an Orang Rimba man and woman in a shallow stream, Pengelaworon group (2014)

of either root (*tuba akar*), or wood (*tuba kayu*). It tranquilizes the fish and other aquatic animals, so that they are easy to catch. *Menuba* is done in an upstream area so that the fish will flow downstream into the baskets placed in the riverbed.

The Orang Rimba usually classify the animals they hunt and fish on the basis of size. For instance, key informants from the Air Hitam group differentiate between large size (*godong*), middle size (*sedang*), and small size (*kecik*) fish. Other classifications of animals like snakes, lizards, soft turtles, squirrels, bears, primates, birds, and bats are usually made on the basis of types of animals. It is interesting to note that the Air Hitam group considers primates and rats as taboo animals, while another group (such as Terab) consider those animals as edible. The differences came from the preference of the animal supplies. Based on the three groups studied, the differences and preferences apply to all group members. This means that the Sako Tulang group may have different preferences to the Terab group and Air Hitam group, and the other way around.

Gathering for subsistence is mainly limited to a number of wild tubers (*diascorea* species) such as *benor* and *gadung*, which continue to grow as long as substantial parts of the root system are kept during the digging out of the tubers.[17] Meanwhile *ubi* (tuber), *keladi* (taro), and *tebu* (sugar cane) are classified as cultivated plants. In addition, at least 15 kinds of fruits are collected, the taste of which ranges from sweet and mildly sweet to mildly sour and sour. This will be further discussed in the section on seasonality. However, the Orang Rimba have also long been involved in the collection of a range of non-timber forest products for trade purposes, the most important of which are honey, rattan and *jernang* (dragon's blood)[18]. Such products have for centuries been traded with intermediaries (see the section on *jenang* and *waris* in this chapter).

Seasons

To the Orang Rimba, the year consists of two seasons; this causes their livelihood to be characterized by a two-season cycle as well. The first of these seasons is the *gantung tungku* season, which literally means 'hanging up the cooking stove' (*remayo/sesaro/ melarang* or the hardship period), and which corresponds with the dry season. The second, corresponding with the rainy season, is the *hagom/hagop* season. This season is considered a period of merriment that is favorable for obtaining a good harvest from nature. The start of this season is indicated by the first honey harvest from the *sialang* trees. It is also called *petanggungan godong,* which means 'big fruit season', because many fruits are available at the same time.

[17] See Sandbukt (1988) for further reading on foraging staples of the Orang Rimba.

[18] Jernang or dragon's blood (*daemonorhops hyigrophilus*) is a highly valuable product from the Bukit Duabelas forest. Originally from Africa, its resin is used for many purposes such as medicine, dyes, varnish and incense. *Jernang* is a resin type that comes from the fruits of specific rattan species. The most common in Sumatra comes from the species of *daemonorops*. These palm trees are rare and grow slowly. The resin (red resin) comes from the scales of the fruits just before they have matured. We call it dragon's blood because of the deep red colour that exudes from the bark after the trees are wounded. It is a very lucrative product, fetching a price of Rp 800,000.00 – Rp 1,200,000,000 or 60.08-90.12 USD per kilogramme.

Figure 19. An Orang Rimba boy carries durians, Air Hitam (2015)

Seasons are of great importance in the livelihoods of the Orang Rimba, especially with respect to food availability and vulnerability. The Orang Rimba's livelihoods are highly dependent on this seasonal cycle. For instance, they only do collective hunting trips in the *hagom* season. In the same period, they collect honey and fruits. In the season of *gantung tungku* they concentrate more on farming activities (tubers, rubber, and other commodities).

Gantung tungku constitutes a period of food shortages and difficulties. The season marks a period in the year when the Orang Rimba consider nature to be very difficult to them to find food, with all kinds of hardships including difficulties in obtaining fish and meat. All activities become hard and food scarcity reaches its height. In contrast, during *hagom* (*hagop*) the forest provides all kinds of products in abundance. Hunting activities are usually successful, and cultivation activities are equally bountiful. This is the season when the Orang Rimba are not worried about food, since nature becomes a very benevolent provider.

Fruits take a special position in the context of scarcity and abundance. Fruit is locally known as *nuaron* and the Orang Rimba distinguish between two broad categories, namely *buah tutuhon* (picked fruit) and *buah labuh ke tano* (fallen fruit). *Buah tutuhon* includes rambutan, *duku*, *benton*, banana, and so on. *Buah labuh ke tano* includes durian, *buntor*, mango and others. *Buah labuh ke tano* follows the bee migration. When the migration is coming from the east and moves to the west, an abundant harvest (*petanggungan godong*) will follow. This happens once in two or three years. On the other hand, if the migration of the bee comes from the west and moves to the east, the harvest of *buah labuh di tano* is limited. That is called *petahunan melarang*.

The Orang Rimba prefer the so-called fallen fruits.[19] When the fruit season comes, the group constructs temporary shelters close to the trees with the ripening fruits in order to gather them. However, the Orang Rimba have to compete with a number of wild animals that also have a great appetite for these fruits. These animals include various species of monkeys, birds, sun bears, and wild pigs.[20] A problem is that since fruit is consumed in great quantities and the fruit season (October to February) also happens to be the rainy season, Orang Rimba become vulnerable to diarrhea. In addition, malaria and fever are also connected to this period.

More generally, *remayo* refers to periods when the Orang Rimba encounter serious hardships. This can be in the dry and the rainy season. *Melangun*[21] is particularly associated with *remayo*. For instance, if a group member dies while the Orang Rimba are preparing land for planting, the land is abandoned, and the group becomes fully reliant on the forest. The Orang Rimba refer to this hardship condition as *remayo*.

[19] See Sandbukt 1988.

[20] Ibid.

[21] It is important to note here the difference between *melangun* and *remayo*. While *melangun* is mobile activities and movement to other locations, conducted by the Orang Rimba due to the death of family or group members, *remayo* indicates a hardship period in a wider scope, which includes melangun, economic difficulties, social conflicts, and other such hardship events.

2.5 Material culture

Types of housing

For the Orang Rimba, home is where the forests exist, as the forest is the most important part of their cultural identity and their most important source of livelihood. Moreover, based on the Orang Rimba cosmology there are three different worlds that guide their lives. These worlds are *halom nio* (their existence in this world), *halom dewo* (a permanent place for eternal life after death, which is also the place for the gods and the goddesses), and *dunia kapir* or the place for the '*kafir*'/unbeliever which is placed under the ground (see Sandbukt 1984, Prasetijo 2011). All aspects of the Orang Rimba life follow this cosmology, including the way they build their houses.

The Orang Rimba can live and stay anywhere in the forest as long as it does not conflict with their customs and beliefs. The first line of the poem at the beginning of this chapter, '*beratap cikai, bedinding bener….'*, means that the Orang Rimba live under a roof made of *cikai* leaves and between buttresses. The interpretation of this poem is that it is forbidden to have a house with walls. Most of the Orang Rimba stick to this belief up to the present day.

Since mobility is a key characteristic of the Orang Rimba way of life, individual households are scattered along the path of rivers and streams. There are four types of houses, namely *bolalapion, sesudungon, rumah ditano* and *rumah godong,* which will be explained below (see also Prasetijo 2013, Qulub 2016).

The simplest housing type for the Orang Rimba is the *bolalapion*. It is used for temporary shelter during hunting trips or while traveling during short periods of time (one or two nights). It is a very small shelter, about 2 x 2 meters in surface, and it only accommodates two persons. The construction is simple. It can be built in less than one hour by one man. It uses two small branches with a single roof (*hatop*) of leaves and the floor is made from piles of dried leaves. The name of *bolalapion* is derived from the word "*lapik"*, which means pad. Internationally such a house type is known as a 'lean-to' (Porath and Persoon 2008).

The second and most common type of housing of the Orang Rimba is the *sesudungon*. A *sesudungon* is constructed of four small branches of wood (for about 4-5 cm thick for about one and a half up to two meters high) with a simple roof. Nowadays, the roof is made of plastic materials rather than leaves. Plastic sheets are more practical because they are more durable and lighter and easier to carry. These sheets can be bought at affordable prices in the local market or in shops. The *sesudungon* is particularly useful if the group is doing *melangun* or opening or tending to a rubber field. The size of the *sesudungon* depends on the family who will use it. However, the most typical size of the *sesudungon* is 3 x 2 meters for a maximum of three occupants. With this size, it takes two men around one to two hours to build such a house. The *sesudungon* is similar to a *bolalapion*, but it is bigger. Another difference is the floor pad that is made from thin branches that are tied together using rattan or wood fiber to the four main branches. A *sesudungon* can last for a few weeks or even months, depending on its use. *Sesudungon* originally comes from the word "*susudung*", which means camp house.

Figure 20. Four types of housing of the Orang Rimba. Notes (clockwise rotation): picture no. 1: *Bolalapion*, picture no. 2: *Sesudungon*, picture no. 3: *Rumah ditano*, picture no. 4: *Rumah godong*

Figure 21. *Sesudongon* in Pengelaworon group (2014)

A *rumah ditano* is bigger than a *sesudongon* and it is of a more permanent structure using larger wooden poles. These houses have functional rooms, such as a living room and private room. It is important to note here that the segregation of the rooms in the three houses is not based on the walls of a typical house, since the Orang Rimba do not use walls in their housing structures. Instead, the structure is determined by the construction of the floor and a thin layer of bamboo, bark, or wood that separates the rooms. A *rumah ditano* means a house that is attached to the ground.

A *rumah godong* or a 'big house' is completely different from a *bolalapion*, a *sesudungon* and a *rumah ditano*. It is untypical for the Orang Rimba to have such a house, which resembles the Malay style of housing, which is larger and also uses walls. The roof is made from zinc or leaves and the walls are made from wood fiber, bamboo, or bark. The floor is made from thin branches or bamboos that are tied together with rattan. It is built in the middle of a piece of cleared land that will be used for rubber trees. This is the underlying reason why the Orang Rimba adopted a Malay style of house with walling: it is to protect them from the wind, the rain, and the heat of the sun.
Apart from the differences in the material construction of these different house types, there are also differences in the ways the houses are used by men and women. Both *rumah ditano* and *rumah godong* are divided by gender. For instance, the houses for women/girls (*rumah betina*) have a lower floor compared to houses for men/boys (*rumah jenton*). There is a strict regulation that a *rumah betina* may not be used for guests of the opposite sex. A violation of this rule can be interpreted as a love affair and such a violation may be subject to a fine of 20 loincloths (or *kain*, see below). Recently, some Orang Rimba have opted to stay close to their rubber fields in *rumah ditano* or *rumah godong* housing. Living in *rumah ditano* or *rumah godong* is usually a sign of a sedentary household, which means a less nomadic way of life. In the *rumah godong*, there are rooms for men and for women. It also has a small veranda at the back of the house. For instance, these two types of houses are common in the Sako Tulang group for instance, which reflects their close attachment to their rubber and oil palm plantations.
The hearth is located just outside the main house, except in the case of the *rumah godong* which has a hearth inside the house. The cooking pot hangs on a stick above the burning fire wood. Usually, a small amount of dry fire wood is kept under the house. In the smaller house types, the storing place for food, clothes, and equipment is the bamboo or wooden frame of the roof. Tubers and other food products are stored in baskets made of rattan. Cooked food that is not directly consumed is stored in cooking pots. Water is fetched from the small rivers and kept in plastic containers.
The houses are scattered in one compound for one group. The distance between the houses depends on the types of housing. In the case of *sesudungon*, the distance is usually not more than two up to three meters, but it is bigger in the case of *rumah ditano* and *rumah godong*. Field houses are always stand-alone constructions. It is rare to find a variety of house types within a single settlement.

Cloth *(Kain)*
The outfit of Orang Rimba men has always been the loincloth, which is closely related to their identity. Originally it was made from tree bark, but nowadays the men wear Javanese

Figure 22. An Orang Rimba woman cooks rice in Sako Tulang (2013)

Figure 23. An Orang Rimba woman hanging out clothes, Pengelaworon group, 2014

batik *sarong*, called *kain*, tied as a loincloth. They are widely available at local markets. Several references describe how loincloths were introduced among the Orang Rimba by their *jenang* (see Prasetijo 2011, Sager 2008). The loincloth for men (*kancut* or *cawot*) covers their genitals. In the past the women also wore a loincloth just like the men did but nowadays their clothing depends on their status. Married women wear a *kain* around their waist, which also covers the upper parts of their legs. Unmarried women wear *kemben* that covers the body from their chest to their knees. Children are typically uncovered by clothes until they are about two or three years old. Then the boys start wearing a *kancut*, and the girls will wear a *kemben*. Although Orang Rimba nowadays often wear clothes to cover their full body, especially whenever they are outside the forest, when they return home, many prefer to wear *kain*.

However, the value of *kain* is not limited to covering the body. The cloths also have various social meanings. For instance, during *melangun*, the *jenang* would give *pembujuk* (payments or 'bribes') to the Orang Rimba, so that the Orang Rimba are willing to come back to his "territory". The loincloths also show the empathy of the *jenang* to the family members who lost (one of) their loved ones. In this case, the cloths are given to the Orang Rimba along with food supplies and plastic roofing sheets.

The cloths are also used as a bride price. Before getting married, an Orang Rimba man spends time to serve his future parents in law (bride service), usually for a number of years. In addition, he is obliged to give cloths to the bride before the wedding. The number of cloths given depends on the ability of the groom. If the groom gives plenty of cloths to the bride, he will be more respected by his in-laws. Based on my observation during fieldwork, the average number of cloths for a bride service is about 60 *kains*[22].
The cloths also can be used as payment of custom fines. Basically, there are two kinds of custom fines among the Orang Rimba, namely fines that relate to social violations and fines related to abuse of natural resources. These two violations have to be resolved through a *sidang adat*, or a custom assembly, resulting in a payment of a fine using cloths as the unit of payment. Social violations include marriage problems, divorces, trading disputes, custom disobedience, and so on. Fines related to violations with respect to natural resources usually deal with the cutting down of sacred trees, which is mostly done by outsiders. The highest fine applies to cutting down a *kedundong* tree, which holds beehives. This may cost 500 cloths, equal to the fine for a murder crime or *sebangun nyawo*, which literally means 'one soul worth'.

Finally, the number of cloths a person owns reflects his wealth and power. Those who have plenty of *kain* store them in *the rumah godong* or in other secured places (such as field offices of WARSI[23]), which is especially handy because it is unpractical to carry around large numbers of *kain* during moves from one settlement to another. Even though money is becoming increasingly important, for the payment of bride price and fines, *kain* still are highly valued by most Orang Rimba, including the three groups in this research.

[22] The price of a piece of sarong *kain* during the fieldwork in 2013 was Rp 60,000 –65,000 or $US 4.6 - 5.
[23] WARSI has at least four field offices that are used as storing place for the Orang Rimba.

2.6 Non-material culture

Social organization

One remarkable and puzzling aspect of Orang Rimba society is its political and social organization. Not only is it very different from other societies in Indonesia, it also differs from most egalitarian hunter-gatherer societies, which generally do not have a layered political structure as the Orang Rimba have. The Orang Rimba have a distinct political power structure, rules that members must follow, norms that must be abided by, and social dictates that members must comply with, which have remained basically intact for centuries.

It is worth noting, however, that historically the Orang Rimba followed a simpler political structure, which is more typical for egalitarian hunter-gatherers (Prasetijo 2011). The political positions that are described below (*tumenggung*, *wakil*, *depati*, etc.) have only emerged since Sultan Thaha's era in the 18th century (ibid). It is also important to note here that the political structure of the Orang Rimba is not based on hierarchical relationships, but rather underpinned by the functions and responsibilities each position has in the group. Any issue that requires problem- solving is discussed at the group level. The aim is to arrive at a consensus, and the political structure helps to facilitate this process.

Based on interviews with key informants, the political 'power' structure begins with the *penghulu*. *Penghulu* is a collective name for a number of positions charged with the task of managing and guiding the lives of the Orang Rimba. The *penghulu* comprises the positions of *tumenggung*, deputy *(wakil)*, *depati*, *mangku*, *debalang*, and *menti*. The following is a detailed account of the responsibilities vested in the *penghulu*:

- The *tumenggung* holds the most venerable position among the Orang Rimba. Each group has its own *tumenggung* who is autonomous and independent of other *tumenggung* representing other groups within the Orang Rimba society. He represents his group in forums of other groups of Orang Rimba, as well as in meetings involving the Orang Rimba and outside communities. The *tumenggung* issues permits granting entry into Orang Rimba territory or for people merely wanting to interact with them. He is also the person responsible for making decisions that concern the Orang Rimba's interests. In the group there is usually also someone who can replace the *tumenggung*, his deputy or *wakil*, in case he cannot perform his duties.
- The *depati* is charged with the responsibility of handling legal and judicial issues.
- The *debalang* is responsible for maintaining stability among the Orang Rimba and to avoid or solve local disputes.
- The *menti* is charged with conveying information to all members of the group, for example, informing the Orang Rimba of an impending gathering. It is a little bit like a public relations officer, albeit limited to members within the group. He has a very difficult role considering the fact that the Orang Rimba are spread over a wide area, and he has to convey information to each and every member of the group.

In brief, the *penghulu* mainly manages the relations between the Orang Rimba and external communities and institutions. In addition, there are *tengganai* and *malim* who

handle internal issues. Both these positions grant them as much power as the *penghulu*. The following is a detailed description of the duties and responsibilities of the *tengganai* and *malim*:

- The *tengganai* gives customary advice and resolves family disputes (for instance, marriage issues) as well as other family issues. While the *tumenggung* manages external affairs/relations between outside parties and the Orang Rimba, the *tengganai* handles issues within the group.
- The *malim* or *alim* is the spiritual leader for the Orang Rimba groups. His role and influence are immense in the society. A *malim* officiates in marriage ceremonies and during rituals at births and deaths. In addition, the Orang Rimba believe he has the power to intercede for the living with the souls of their ancestors.

Jenang* and *waris

A long-standing relationship between the Orang Rimba and the Orang Melayu started in the sultanate (Sultan Thaha) era in the 18th century. At that time, two major groups of people were recognized in Jambi, namely the Orang Ulu and the Orang Ilir (see Prasetijo 2011). *Ulu* means upstream and is associated with mountainous and forestry areas, and *ilir* refers to the downstream area, which is more developed and was in the past close to the sultan's bureaucracy. The love-hate relationship between *ulu* and *ilir* was a result of the fact that both parties actually needed each other. The Orang Ilir needed the natural products that the Orang Ulu could produce, like the wide range of non-timber forest products. In addition, the Orang Ulu could also provide manpower. Meanwhile, the Orang Ulu needed consumer goods from the Orang Ilir that they could not produce themselves, such as cloths, salt, sugar, cigarettes, and agriculture tools. Together with the Orang Bathin and the Talang Mamak, the Orang Rimba were classified as Orang Ulu.

To remove the barriers between *ulu* and *ilir*, the sultan installed a kind of intermediate person between the downstream and upstream people, called *jenang*. In short, the *jenang* was the representative of the sultan in all corners and parts of the region, especially in remote areas. He was charged with the task of handling issues on the sultan's behalf. The *jenang* also had the right to collect certain taxes (*suntung naik/serah*) from the Orang Rimba and other forest-dwelling peoples. In return, the *jenang*, as a representative of the sultan, was obliged to give protection to the entire population (*jajah turun*).

However, things did not go according to plan. Gaining people's trust proved very difficult due to the Orang Rimba's previous traumatic experiences. These bad experiences related to the practice by the Orang Ilir of turning Orang Ulu into mistresses and slaves, because the latter were considered inferior to the former. This included the Orang Rimba, who were considered to be dirty, stupid, poor, and uncivilized. Thus, because of the dark past, the Orang Rimba opted for silent trade of forest-products (Persoon 1989; Sandbukt 1988) with the *jenang* (Prasetijo 2011). Such (silent) exchange happened as follows: the Orang Rimba would place their forest produce in specific locations, after which they hid somewhere and waited for the arrival of "modern" products, without making any contact or meeting parties from the other side of the "transaction".

In an effort to increase the efficiency and effectiveness of his power, the *jenang* or *waris* established a political structure among the Orang Rimba, who were traditionally very mobile and widely spread in the Bukit Duabelas area. Consequently, positions

such as *tumenggung*, *depati*, *mangku*, and *menti* emerged. Initially, there were only four *ketumenggungan* (area divisions with a leader in each area) in the Bukit Duabelas area, namely Air Hitam, Kejasung, Makekal Hilir, and Makekal Hulu (see Aritonang 1997; Prasetijo 2011). However, as the relations between the Orang Rimba and other parties intensified, the number of *ketumenggungan* also increased. Based on the above account, I assume that the existing political structure of the Orang Rimba is not the result of an internal evolutionary process, but rather the creation of outsiders. Currently, the Bukit Duabelas area is divided in seven *ketumenggungan.*

The advent of the Dutch colonial era saw a strengthening of the roles of the *jenang* and *waris*. This was because forest products in general and commodities like rubber in particular were considered vital in Jambi. There was a big demand for these products in the international market. Consequently, the *jenang* and *waris* became even more important during the colonial period.

The close attachment of the Orang Rimba to their *jenang* and *waris* is still visible today, in various degrees, with the most visible practice in the area of Tanah Garo (western part of Bukit Duabelas). This is because the Orang Rimba in Tanah Garo depend on rubber for their livelihoods and they need the *jenang* and *waris* to act as middlemen in the sale of their rubber. The Dutch introduced rubber in this area in 1939 (see Amilda 1999). Prior to that, the majority of the Tanah Garo people lived by hunting and gathering forest products, such as *damar* (resin), *rotan* (rattan), and *jernang.* Later the logging industry became more important. During the 1960s and late 1970s, rubber planting boomed, increasing the Orang Rimba's dependency on rubber gardens.

Compared with other groups, the Orang Rimba of Makekal Hilir have the strongest ties with their *jenang-waris*. However, before going deeper into this discussion, it is necessary to differentiate between the *jenang* and the *waris*. As explained, the *jenang* is an intermediary between the Orang Rimba and the outside world. The *jenang* embodies the economic interest between both parties. Meanwhile, the *waris* is the guardian of the Orang Rimba, whose role goes beyond economic interests and goes as far as handling family matters. *Waris* are Orang Melayu who are considered to have had family (blood) relations with the Orang Rimba in the past.
One of the elements of the *seloka adat* (customary law) of the Orang Rimba refers to the relationship between the Orang Rimba and their *jenang*/*waris*. Citing the law in the local language "Pangkal Waris Tanah Garo, Ujung Waris Tanah Serengam, Air Hitam Tanah Berjenang" (Aritonang 1999), the law reflects at least four meanings. Firstly, it relates to the scope of the area where the Orang Rimba live, i.e. the forest areas in Tanah Garo (the western part of Bukit Duabelas), Serengam (central part of Bukit Duabelas), and Air Hitam (southern part of Bukit Duabelas). Secondly, it is an affirmation of the authority of the *jenang* and the *waris* among the Orang Rimba. In this sense, *waris* are those who have authority to "lead" the Orang Rimba in Tanah Garo and Serengam. Meanwhile *jenang* are those who "control" the Orang Rimba in Air Hitam. Thirdly, *jenang* and *waris* are regarded as those individuals who have the power to connect the Orang Rimba with outsiders. Fourthly, *jenang* and *waris* are those individuals who have the obligation to solve

problems of the Orang Rimba, with respect to their internal and external conflicts. This *seloka* is always mentioned at every meeting or in every discussion (*sidang*) among the Orang Rimba, whether the issue under discussion concerns internal or external affairs. Just like many other important *seloka,* this *seloka* has been passed on from one generation to the other for centuries. The Orang Rimba consider the *seloka* as an important legal basis that they inherited from their ancestors.

According to the Orang Rimba of Makekal Hilir, *waris* means *sanak betina* or family members who share the wife's blood relations. As the Orang Rimba profess a matrilineal system, the *waris* plays an important role because he is responsible for all aspects of the Orang Rimba's lives. For example, a *waris* takes full responsibility whenever anything happens that affects the Orang Rimba. He pays the Orang Rimba's debts if they have difficulties in repaying their obligations. Thus, the *waris*' responsibility includes personal and family problems and beyond. The Orang Rimba venerate *waris* as revered family or their guardian angels. In return, the Orang Rimba dedicate part of their produce to their *waris*. To make a brief distinction between the *jenang* and the *waris*, we can say that the *jenang* only controls the economic interest, while the role of the *waris* is much larger. During my fieldwork, the most respected *waris* in Tanah Garo passed away. According to customary rules, the position of *waris* must be passed on to the next generation of the previous *waris*. However, the children of Sayuti are not keen on taking the *waris* position and prefer a political role in the village. Now, one of the sons of the late *waris* is the village chief (*kepala desa*) in Tanah Garo and is planning to run for the legislative position in Tebo District. Consequently, the relationship between the Orang Rimba and their *waris* in Tanah Garo has changed.[24]

The downside of the role played by the *jenang* and the *waris* lies in the fact that rather than upholding the Orang Rimba interests, they often put their own interests at the forefront of their activities. They do whatever it takes to maintain their stranglehold on the Orang Rimba's resources. To achieve that, they constantly redefine their role. Today, they no longer represent the sultan and/or other current authorities but are more occupied with economic interests.

This history, which is supported by the scientific literature (see Sandbukt 1984; Persoon 1989; Prasetijo 2007; Sager 2008; Wardani 2011), provides us with ample evidence that the Orang Rimba are not as isolated as many people tend to think. In fact, the Orang Rimba have been connected with the outside world for centuries, and these relations have contributed to the present livelihood of the Orang Rimba directly and indirectly. The intensity of this contact has grown enormously in recent times, and particularly since the late 1980s. Over the last four to five decades, the acceleration of development in the Jambi Forest corridor, attributable to the construction of roads, has made direct interaction between the Orang Rimba and other communities increasingly commonplace. Moreover, the "invisible hand" of the market continues to transform their livelihoods.

24 See the discussion on how waris have been transformed in Chapter III.

2.7 Civil society's concern for the Orang Rimba

The considerable attention paid to the Orang Rimba often emanates from and is hyped up by popular media, such as newspapers, television stations, books, and recently also films (for example, Manurung 2013 and Riza 2013). One of the reasons why the Orang Rimba receive comparatively more attention than other indigenous groups in Indonesia is to be attributed to the commitment and efforts of a local NGO in Jambi called WARSI[25], which has been working in the area for nearly 25 years to improve the living conditions of the Orang Rimba through various programs. WARSI endeavors to enhance the Orang Rimba's awareness and understanding of the problems and pressures they face. An enhanced awareness of their condition should pave the way for Orang Rimba, facilitated by the NGO, to suggest practical solutions. The hope is that, in the long run, the Orang Rimba themselves will be at the forefront of efforts to get the government to observe their rights to land[26].

One of the programs involves efforts tailored to understanding the various pressures and the ever-decreasing forest habitat in particular. Other programs involve providing quality education and improving the Orang Rimba's poor health. A survey conducted by WARSI in 2006 among roughly 1,500 Orang Rimba individuals in TNBD found 405 cases of a range of diseases. The most common of these were upper respiratory tract infections, skin infections and unspecified muscle/bone problems (see Table 6). To my knowledge, this is the best available data on Orang Rimba health to date.

WARSI further aims to support the Orang Rimba in halting the pressures confronting them, especially those that arise from logging practices and expansion of plantation activities in their territory. For instance, in collaboration with the Orang Rimba, the NGO has developed a bridgehead garden or *hompongon*[27] along the fringes of forests aimed at forestalling the encroachment of the farming population into the forests.

This effort is also designed to ensure that forest products, such as rubber, long cultivated by the Orang Rimba, can be developed in a sustainable manner to provide both them and their offspring with resources in the long term. Since the establishment of the *hompongon*, the number of rubber trees grown in the TNBD by the Orang Rimba has mushroomed. Besides such efforts, WARSI also provides training and arranges exchange visits with other Indonesian forest-dwelling communities in order to enhance their mutual

[25] WARSI is a non-government organisation established on 27 December 1991 by a number of inter-disciplinary and inter-genre activists that share the same views in the area of natural resource management. WARSI promotes a new approach to natural resource management in the national park areas through community conservation. Its motto is "conservation with the community", with a focus on the empowerment of the indigenous peoples (such as the Orang Rimba, the Batin Sembilan, the Talang Mamak, the Dayak, and the Punan). WARSI manages funds from national and international donor organisations (https://warsi.or.id/profile-en/).

[26] Government policies on forest land use and the Agrarian Law 1960 do not recognize minorities' rights to land.

[27] *Hompongon* means the boundary of a rectangular-shaped field and indicates the rights to a field an individual has and the types of crops that can be grown on the four sides of the field. *Hompong* means four, which is a reflection of four essential elements of life for the Orang Rimba. The four elements are the river, the world of the Orang Melayu, the world of deities, and the life of the Orang Rimba.

Figure 24. A local doctor from Pauh district makes a visit to the Terab group (2013)

Figure 25. A doctor and health facilitators from Pauh district in cooperation with WARSI during a lunch break among the Terab group (2013)

understanding of shared problems and of the environment.
WARSI has also been instrumental in arranging a number of meetings between one of the Orang Rimba leaders, *Tumenggung* T, with high officials in Jakarta. This has happened a couple of times. *Tumenggung* T has also received environmental awards, like the Kehati award for 'sustainable forest management' and the Kalpataru award for 'nature conservation'. In his capacity as the Orang Rimba leader he received these awards from former presidents Megawati Sukarnoputri and Suliso Bambang Yudhoyono. The Department of Social Affairs has also tried to make him a role model for a 'modern Orang Rimba', with a decent house in a modern settlement, and they have tried to convert him into a devout Muslim (Prasetijo 2015; Persoon and Wardani 2017). However, for most Orang Rimba the life of modern urban centers with all its opportunities and challenges is unknown. They spend most of their time in the strongly modified rural landscape of Central Jambi and its adjacent villages without integration into Malay or Javanese transmigrant communities.

WARSI is also involved in providing training in literacy, health, and sanitation to Orang Rimba youth. Basic education is mainly intended to equip the Orang Rimba with the requisite knowledge to participate in negotiations with 'external' parties regarding transactions in rubber and other non-timber forest products, and in the purchase of their necessities. Better negotiation skills are crucial in fetching better prices for their

Table 6. Types of diseases found among 1,500 Orang Rimba in Bukit Duabelas (2006)

No.	Types of diseases	Case	Percentage
1.	Upper Respiratory Tract Infection	109	27
2.	Skin infection	88	22
3.	Muscle and bone problem	61	15.1
4.	Malaria	33	8.1
5.	Respiratory disorders	27	6.7
6.	Fever	26	6.4
7.	Diarrhea	17	4.2
8.	Mouth teeth problems	11	2.7
9.	Anemia	9	2.2
10.	Headache	8	2
11.	Worm	6	1.5
12.	Hepatitis	3	0.7
13.	Vascular problems	2	0.4
14.	Cataract	1	0.2
15.	Vomiting blood	1	0.2
16.	Urinary tract infection	1	0.2
17.	Herpes simplex	1	0.2
18.	Hemorrhoid	1	0.2
	Total	**405**	**100**

Source: KKI WARSI, calculated by the author, 2006

Figure 26. The Orang Rimba in the hompongon, Pengelaworon group (2014)

forest products. Moreover, WARSI hopes that such education will contribute to the Orang Rimba's preservation of the forests.

Another NGO that deserves mention here is *Aliansi Masyarakat Adat Nusantara* (AMAN) or the Alliance of Indigenous Peoples of the Archipelago that was founded in 1999 shortly after the fall of President Suharto. Specifically, in the case of the Orang Rimba, through AMAN, the Orang Rimba have been afforded the opportunity to ventilate their voices at the national level at the annual meeting of *masyarakat adat*, organized by the alliance. In general, AMAN has a keen interest in the broader issue of ensuring the survival and sustainability of indigenous peoples in Indonesia. As Li (2001) notes, AMAN and its alliances provide support for the lives and well-being of *masyarakat adat* as minority groups (in terms of population numbers) in Indonesia, also because of the constant external pressures and forest degradation. These pressures have resulted in *masyarakat adat* in Indonesia losing their identity and, in turn, their cultural distinctiveness in Indonesia. Quoting Li (2001: 645):

"AMAN and its supporters assert cultural distinctiveness as the grounds for securing rights to territories and resources threatened by forestry, plantation, and mining interests backed by police and military intimidation. Their attempt to place the problems of 'masyarakat adat' on the political agenda has been remarkably successful. While seven years ago the head of the national land agency declared that the category *masyarakat adat*, which had some significance in colonial law, was defunct or withering away (Kisbandono 18/02/93), the term now appears ever more frequently in the discourse of activists, parliamentarians, media, and government officials dealing with forest and land issues."

Figure 27. A muddy road to the Pengelaworon group (2014)

It can be said, however, that WARSI's efforts have undeniably triggered efforts by others. One good example is the work of Butet Manurung, a former WARSI staff member. Butet is well-known as an individual who is heavily involved in alternative education for *masyarakat adat* across Indonesia. Her concerns were triggered by her experiences as she worked in WARSI's youth education programs. Since then, she has written a book relating her personal stories about implementing alternative education for the Orang Rimba's youth and the formation of her own NGO, called *Sokola Rimba*. In 2015, in cooperation with a well-known film producer and director in Indonesia, Butet turned her story into a film entitled 'Sokola Rimba'. She is often invited by national television stations and newspapers to provide insight on the Orang Rimba's present conditions and their well-being (Manurung 2013, Riza 2013).

Aside from individual efforts by people like Butet, the media also often broadcast short news bulletins or documentaries on the state of the Orang Rimba. Some public intellectuals and reporters routinely write news on the conditions of the Orang Rimba, in particular *Kompas* and the *Jakarta Post*, two of the country's leading newspapers. *Kompas* correspondent Irma Tambunan, who is based in Jambi, is specifically assigned the task of reporting news about the Orang Rimba. *Kompas* has also designated an occasional space to academics and activists, who publish short articles and opinion pieces on issues concerning the Orang Rimba. The *Jakarta Post* (an English newspaper in Indonesia) regularly sends its journalists to Jambi to report on special Orang Rimba events and it occasionally designates space for opinion columns written by those who are interested in Orang Rimba issues. Metro TV, Kompas TV and other national television stations also occasionally broadcast special reports on Orang Rimba related issues.

2.8 Designation of the Bukit Duabelas National Park

In 2000 the Bukit Duabelas Forest area, which stretches for more than 60,500 hectares, was designated as a national park with the assistance of WARSI. The establishment of the TNBD was implemented with the Ministry of Forestry decision statement No. 258/Kpts-II/2000. Before this statement was issued, about 27,200 hectares of the TNBD had already been designated as a biosphere reserve,[28] based on the Governor of Jambi's decision No. 522 in 1984. Thanks to almost 16 years of lobbying by WARSI, the government of Indonesia finally granted the Bukit Duabelas area a national park status.[29] The issuing of the decision statement provided a solid legal foundation for the Orang Rimba living in Bukit Duabelas area, as the TNBD is the only national park that is reserved for the exclusive use of *masyarakat adat*. Following this decision, the government, represented by the Ministry of Forestry, also issued a policy in the form of a management plan for Bukit Duabelas National Park.

The management plan needs a long process to be developed and implemented. It started in 1984 when Bupati Sarolangun or Head of the District Sarolangun issued the Decision

[28] The biosphere reserve was designed for scientific research related to forestry issues.

[29] This is based on various unpublished Warsi program reports and from interviews with Warsi staff.

Letter or *Surat Keputusan* No. 522/182/1984 on 7 February 1984 proposing to the Governor of Jambi to give privilege to the Orang Rimba to live in the area of the national park, both inside and surrounding areas. The Governor followed it up through Decision Letter No. 522.51/863/84 on 25 April 1984 to propose to the Ministry of Forestry with regard to the area of Bukit Duabelas for around 28,707 hectares to be a biosphere reserve. It took about three years for the Ministry of Forestry to finally issue Decision Letter No. 46/kpts-II/1987 on 12 February 1987 to declare the 29,485 hectares of Bukit Duabelas area to be a biosphere reserve. Later on, after 13 years of lobbying, under the presidency of Abdulrahman Wahid (or better known as Gus Dur), the TNBD was declared as the one and only national park in Indonesia for the exclusive use for the Orang Rimba in 23 August 2000. The total area of the TNBD was expanded to 60,500 hectares including the previous 26,800 hectares of the biosphere reserve. Its boundaries fall within three administration areas, namely the districts of Batanghari, Tebo, and Sarolangun.[30]
The official zoning system of the area currently refers to the TBND zoning document, issued by the Ministry of Forestry on the Decision Letter of SK. 22/IV-KKBHL/2015 on 27 January 2015. The document was the result of a long process in which participatory methods were used in order to accommodate the needs of the Orang Rimba. Referring to the Decision Letter, the zoning system consists of[31]:

- Core zone (red color) – 8,258.1 ha: consists of hilly and protected areas that are considered still pristine. This is an untouched forest and a forbidden zone for human activities.
- Forest zone (yellow color) – 1,804.5 ha: is a buffer zone for the core zone. These are protected areas and free from commercial activities.
- Utilization zone (green color) – 648.3 ha: includes the tourism area in which other forms of exploitation are also allowed. This is the secondary forest, also called utilization zone, the areas with natural resource potential that are used for commercial purposes over the generations.
- Traditional zone (brown color) – 38,780.3 ha: includes the Orang Rimba's settlements, hunting-gathering areas, and the areas where *sialang* tree and fruit orchards are located.
- Religious zone (purple color) – 5,113.4 ha: this zone consists of the Orang Rimba's religious areas that include *tanoh peranoan* (delivery parlor/garden), *bebalai* (holy lands), *tanah dewo* (goddess lands), and *tanah bersetan* (forbidden lands).
- Rehabilitation zone (blue color) – 179.7 ha: open areas due to forest fires, encroachment, and other critical lands that need rehabilitation.

Besides the official legal framework for the national park, the Orang Rimba themselves also have customary rules that they adhere to, in order to protect and preserve the forests. In addition to the official zoning system issued by the Ministry of Forestry, the Orang Rimba have a spatial utilization system, inherited from their ancestors, which delineates the functions and customary rules on forest management.

[30] See: http://www.tnbukitduabelas.id /Konten/unduhan.
[31] See: http://www.tnbukitduabelas.id/profile/zonasi-kawasan.

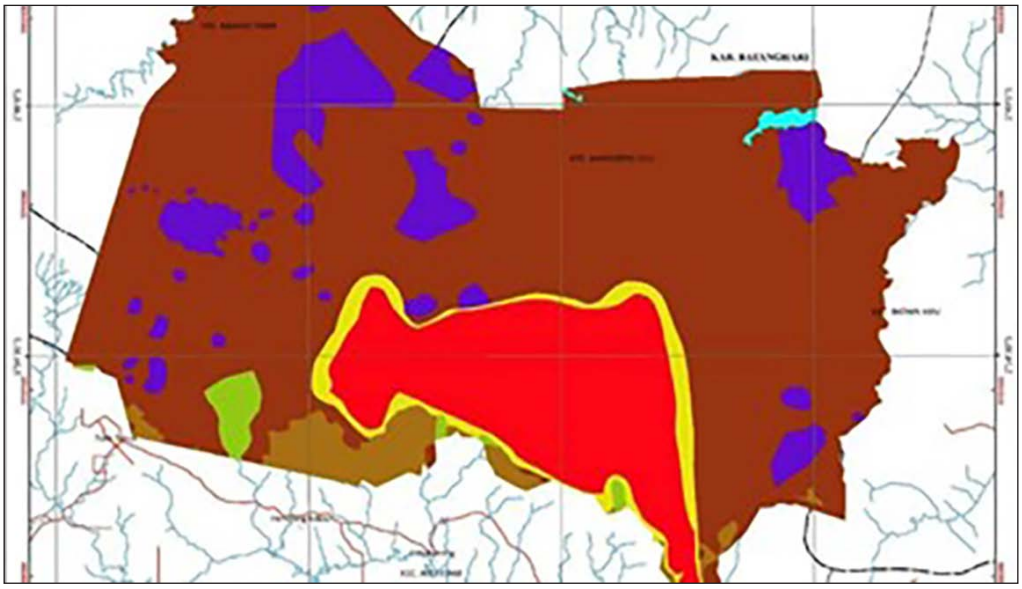

Figure 28. Zoning map of Bukit Duabelas (2019)
Source: http://www.tnbukitduabelas.id/profile/zonasi-kawasan, edited by the Author

Figure 29. The Bukit Duabelas Forest from above (2000). *Source: KKI WARSI*

According to the customary dictates, the forest is divided into three major sections: the forbidden forest (*setali bukit*), the customary forest, and the 'residential' forest. The forbidden forest is referred to as *inumon,* which is the water catchment area, located on the mountain tops and serving as the source of water resources. This part of the forest is believed to be the home of deities and devils. The area should be free from exploitation. The customary forest contains a lot of flora and fauna that are of great value for the Orang Rimba. This area includes the *muaron* (fruits garden/park), the *tanoh peranoan* (delivery parlour/garden), the *pohon sialang* (the tallest trees in the forest, important for honey harvesting), and the *sentubung* (which symbolizes the life of an individual in the Orang Rimba). The residential forest lies on the outskirts and this is where the Orang Rimba have their settlements. It is also in this part of the forest that the Orang Rimba open up fields for various crops. Regrettably, however, a source from the Bukit Duabelas center (quoted in the *Jakarta Post* on 27 November 2012) estimates that, at that time, only 30% of forest in the Bukit Duabelas was intact, while the other 70% had been damaged, primarily because the Bukit Duabelas used to be a forest concession area or Pemegang Hak Pengusahaan Hutan (HPH) area.

2.9 State projects

The designation of the Bukit Duabelas national park is an exception within the broader development context. The prioritization of economic development over other goals has meant that forest conservation has been low on the list of government priorities. In fact, forests have become "savings that are easy to cash in". Forest products are tailored to pay off the country's debts, meet the demand for valuable tropical timber in developed countries, and act as an alternative source of foreign exchange to support national development efforts embodied in various five-year development plans, the so-called Repelita since 1969-1998, and one could say with some justifications, to the present day.

Moreover, the appalling and sad pictures are compounded when we capture the detailed facts on the ground in Jambi, one of many equatorial rainforest stories. This was a vast rainforest before the degradation started, especially since the 1970s, and it rolled back to its current worrying extent. Without doubt, the massive and rapid development in Sumatra has a significant correlation with the progress of forest degradation in Jambi. Today, Indonesia (especially Sumatra) has the highest annual rate of deforestation in the world. According to Kubitza (2017), Jambi has lost its forest cover from 48% in 1990 to 30% in 2013. Another report describes that the remaining forest cover in Jambi is only about 18% in 2017 (Tribun Jambi 2017).

Transmigration projects are the lynchpin of the development programs implemented by the Indonesian government in areas that are inhabited by the Orang Rimba. According to Levang (2003), transmigration projects, which began in 1905 under the *kolonisatie* program initiated by the Dutch administration, were later adopted by the government of Indonesia to tackle some key problems, including population distribution, poverty, and food security (see Levang 2005, Persoon 1998, and Koentjaraningrat 1993 for

more details). Since they remain a key component of contemporary government policy, transmigration projects are expected to continue for the foreseeable future.

To attract newcomers from Java and Bali, the government promoted good infrastructure. The most significant element in this policy was the opening of the Trans Sumatra Highway, which began during the Sukarno era in the 1950s but continued into the Suharto era (1967-1998). The project connects the northern tip of the island with the southern part through a dense network of secondary and tertiary roads. One of the direct impacts of the construction of the Trans Sumatra Highway was the opening of the lowland rainforests. To support development programs, roads connecting hitherto remote and isolated Sumatran areas were constructed, and deforestation followed suit. Prior to the construction of the highway, people living in this part of Sumatra relied on the Batanghari River and its tributaries as a mode of transportation. However, as more roads were developed, access to the forest became relatively easy. This fueled the development of the timber industry in the area, to meet the rapidly rising demand for wood products on the domestic and international markets (Levang 2005).

The role of government projects reached its peak during the Suharto era. In the 1970s, the government started awarding concessions to the president's military and business colleagues, thereby building patronage relations that created business conglomerates. Family businesses *de facto* fell into the hands of the Ministry of Forestry, which was charged with handling them for years. Subsequently, *Perhutani* and *Inhutani* (state-owned companies) were established (see Down to Earth 2002). It was also during the 1970s that the development of large-scale commercial logging reached its peak. A decade later, the timber processing industry was booming and, at the same time, the Ministry of Transmigration launched an ambitious transmigration program through which large numbers of Javanese migrants would be moved to the outer islands.
In the 1990s, the paper and pulp industry as well as oil palm plantations reached their peak. In 1990, the implementation of concessions for Industrial Timber Plantations allowed companies to plant and harvest timber for industrial use on unproductive, permanent production forest land. This contributed to an acceleration of the rate at which permanent production forests were cut for tree crops, especially palm oil, rubber and cocoa, rather than timber (the World Rain Forest Movement 1990).

Recent developments in the forest policy revolve around government plans to increase the production of palm oil in order to take advantage of the record high prices for this commodity, and the equally lucrative production of biofuel. It is not only the demand for timber products and palm oil that has led to high rates of deforestation, but also mining activities, a decentralization policy, national government policies in agriculture, and forest land use and land rights, among others.
In the context of Jambi, and more specifically the Bukit Duabelas area, deforestation started in the early 1980s, at the same time as the government implemented transmigration projects. In the Bukit Duabelas area, pressure emanated from the western and northern sides of the national park. Massive transmigration projects at that time were concentrated in Kuamang Kuning (western part of Makekal) and Tanah Garo (northern

part of Makekal). However, accelerated deforestation is not only attributable to the establishment of transmigration projects, but also to the issuing and establishment of concession companies that were granted the right to convert forests into plantations. The issuing of forest tenure rights to companies such as PT. Alas Kesuma (1970s), PT. Darma Petra Diamonds (1990s), and PT. Inhutani V afterwards, brought deforestation to its peak. Encroachment on forests also came from large-scale oil palm plantations owned by companies such as PT. Sawit Desa Makmur (1989), PT. Eramitra Agro Lestari (1991), PT. Jambi Agro Wijaya (1991), PT. Sari Aditya Loka (1991-1992), and PT. Wana Pioneers afterwards (WARSI, various documents, unpublished).
From a WARSI report (WARSI 1998) I learned that PT. Limbah Kayu Utama (PT. LKU) was awarded a concession of 19,300 hectares of forest based on permit No. 327/KPTS-II/98 on February 27, 1998. The PT. LKU area is administratively located in Tebo District and Batanghari District. The existence of PT. LKU became problematic due to the fact that its concession lies on the border of the national park and is surrounded by some villages. In fact, Tanah Garo and Batu Sawar are located in the heart of the concession area. The Malay inhabitants of these two villages practice slash-and-burn agriculture, called *bertalang* (opening and clearing the forest for agriculture). The average size of land ownership by the Malay people is about 1.5 hectares or *setumbuk*, to borrow a local term. It is estimated that around 300 hectares in the concession belong to villagers.

The overlapping land-use by PT. LKU and villages in the buffer zone of Bukit Duabelas National Park has been a source of conflict. A study conducted by Jambi University (WARSI 1998), Tebo regional development agency and WARSI, shows that an area of some 20,000 hectares that belong to PT. LKU has been in an abandoned state for more than 15 years. In the meantime, the dearth of land for villagers has intensified. Consequently, the pressure on the forests has intensified too. An obvious case in point emerged during my fieldwork. The Orang Melayu and transmigrants can easily enter the protected Bukit Duabelas area. They cut the trees illegally and take them out of the park. Thousands of cubic meters of logs are leaving the national park as a result of this land clearance. After clearing the land, the transmigrants and the Malay people have two options: the land can either be sold to other people or it is converted into rubber and oil palm plantations.

Another government program was developed in 2010. In that year, the government implemented a national scheme, kompensasi kenaikan harga *bahan bakar minyak* (BBM) or fuel compensation program, designed to compensate the poor for the steep rise in fuel prices. However, the three groups of the Orang Rimba in this study were left out of the scheme. This was largely due to the lack of census data of the Orang Rimba, which implied it was difficult to know the exact size of the groups, let alone determine who fulfills the requirements set by the government to receive such assistance. WARSI carried out the only survey that exists in cooperation with BPS in 2010, which was limited to enumerating the population of the Orang Rimba living in the Bukit Duabelas area. To date, there has been no survey of the Orang Rimba living in Bukit Tigapuluh or those living along the Trans Sumatra Highway. Consequently, only a small section of the Orang Rimba received assistance from this compensation scheme.

2.10 Government efforts to resettle the Orang Rimba

The role of the government has been very influential in the shaping of the livelihood of the Orang Rimba both directly and indirectly. Through the transmigration projects and the issuance of logging and plantation concessions the government has had a big impact on the living environment of the Orang Rimba, often sponsored by international institutions such as the World Bank, as well as commercial banks operating nationally and internationally.

Another important element of the government's development agenda consists of various resettlement programs in Jambi. For over five decades, as the pace of forest degradation in Jambi accelerated, the government, through the Ministry of Social Affairs, made various attempts to persuade the Orang Rimba to settle down and start living an ordinary village life just like the Malay people. This also meant that the government wanted the Orang Rimba to change their livelihood from hunting and gathering forest products to sedentary agriculture.

It is worth examining the nature of this *Pembinaan Kesejahteraan Masyarakat Terasing* (PKMT), or program for 'isolated and estranged' people, which later after 2002, under the influence of AMAN, has changed to *Pemberdayaan Komunitas Adat Terpencil* (PKAT) or empowerment for isolated customary people. In the spirit of improving the lives of *komunitas adat terpencil* and in the name of *pemerataan pembangunan* or inclusive growth or development, the government adopted an all-embracing resettlement approach to tackle the problems of these remote communities. This was specifically done with *persatuan Indonesia* or the national unity of Indonesia in mind, an idea proposed and

Figure 30. An early resettlement project for the Orang Rimba in Pulau Kidak (1985) (© G. Persoon)

supported by the regime of Sukarno and later fully developed by the Suharto regime. The projects were considered to bring 'civilization' to the 'isolated people'. The first project to resettle the Orang Rimba in the area of Bayung Lencir, district Musi Banyuasin in the province of South Sumatra began in 1951. At that time the first effort was tailored to collecting data and preparing the Orang Rimba to accept the development program. It was not until 1964 that the pilot project finally began (Departemen Sosial 1973; Persoon 1994; Martodirdjo 1998).

Persoon and Wardani (2017) show that many of these efforts to resettle the Orang Rimba have failed because the projected future offered by the Ministry of Social Affairs is in sharp contrast with the way the Orang Rimba would like to shape their future. Life in a resettlement village conflicts with Orang Rimba culture and traditions. Most of the Orang Rimba prefer to go back to the forest again and only a few people or some small groups have successfully accepted the new way of life. One of the examples is one group in Bukit Suban (see Prasetijo 2011). In spite of the limited amount of success of the resettlement project, the Orang Rimba continue to be one of the targeted groups of the Ministry of Social Affairs for this program aimed at the country's 'isolated communities'.

2.11 Conclusion

The aim of this chapter was to provide a general ethnographic and historical background of the situation of the Orang Rimba in the central part of Jambi. This general overview of the present-day situation gives a brief description of the livelihood context, as a basis for further discussion in the following chapters.
The chapter started with the discussion of President Jokowi's visit in late 2015. As discussed at the start of this chapter, it appears that the current president intends to repeat previous policies, which were committed to pulling the Orang Rimba from their 'primitive state' into mainstream society on the road to social and economic development. As discussed, however, this is likely to increase rather than reduce pressure on the remaining forests. Such programs commenced as far back as the early 1970s, when the Ministry of Social Affairs wanted to resettle nomadic societies such as the Orang Rimba on smaller pieces of land with modest but permanent housing, rather than provide real compensation for the loss of the only asset they have: land, with dense forests full of plant and animal life. This policy, if Jokowi's administration implements it exactly as he stated, is likely to hasten the death knell of forest-dependent Orang Rimba.

The Orang Rimba strongly maintain their tradition despite the more open relationship with other ethnic groups. Some vivid examples reflect on their hunting and gathering activities as the most important element of their life up to date. In other words, it can be said that the Orang Rimba have local knowledge which they have practiced for centuries in treating nature and maintaining their way of life. They have used traditional ways of tilling land, gathering forest products, hunting, and fishing. The sharing of their catch in hunting, managing their communal resources, such as *sialang* trees, and the collection of other forest products, indicate that their local knowledge is still relevant at present. At the same

time, they are also engaged in small-scale agricultural activities, particularly in rubber and oil palm plantations.

Another important component of the lives of the Orang Rimba is the existence of the non-state actors such as the NGOs, the media, and others with an interest in these people or their lands and resources. Through them, the existence and livelihood of the Orang Rimba have been influenced significantly. It is worth noting that the long-standing relation between the Orang Rimba with *jenang/waris* is a very vital element of the lives of the Orang Rimba. Moreover, the roles of *jenang*/*waris* have evolved over time. This is not only because these intermediaries have become an integral component of the social networks of the Orang Rimba, but they also have wide-ranging functions. Not only do they uphold the interests of the Orang Rimba but nowadays their own economic interests are at the forefront.

Now that a general ethnographic and historical background of the Orang Rimba has been sketched, the following three chapters will illustrate differences within this population by detailing the types of food that the three different groups consume and how they acquire them.

An Orang Rimba man in Sako Tulang checks his rubber seeds. 2014

III The Sako Tulang Group: Living on the Margins

I had mixed feelings as I ventured into the forest once again in mid-2012. It took me quite some time, but thanks to the assistance and comprehensive information I got from WARSI, I was eventually able to reach the Orang Rimba who live in the Makekal Hilir area in the Western part of the Bukit Duabelas national park. The journey was an arduous and long one, riding pillion on a motorbike belonging to a WARSI member, who had played an important role in facilitating my introduction to the Orang Rimba. It was early July and, as usual, the weather during this time of the year was unpredictable. While I had expected to face rainy days, to my surprise I ended up contending with hot and humid weather instead. The distance I travelled from Jambi city to Tebo district was a solid 200 km along the *Jalan Lintas Sumatra* (Trans Sumatra Highway). I had to navigate another 40 km from Tebo, through a meandering stretch of roads built for a transmigration project, hence punctuated with rubber and oil palm plantations as far as the eye could see. It took me about five to six hours to reach Seijernih Village, or as it is popularly known by local inhabitants - Desa S.P.A. (the village of Satuan Pemukiman A).

I was lucky to find a transit shelter where I could rest before entering the Orang Rimba area. Just a kilometer prior to reaching the national park, there was a very nice transmigrant family, who were delighted to welcome newcomers like me, just as they had done with NGO staffs, students, researchers, photographers, journalists, social workers, film crews, and others wanting to meet the Orang Rimba in the western part of the park. The head of the household hails from Banyumas (Central Java) and has been living in Jambi for about 20 years. As a typical transmigrant, he owns a small oil palm plot, which provides a living for his family. The family's home would serve as a place for me to take a break from fieldwork activities in Sako Tulang and so I spent my time going back and forth, at least once a week, if nothing else to get a taste of Javanese cooking. My visits to the family were also a chance to take a "proper" shower, after days in the forest where river water was the only source of water for my daily basic needs. These trips also gave me the opportunity to replenish my supplies of rice, tea, coffee, sugar, biscuits, and cigarettes, the latter being a medium of exchange for my fieldwork. It was also good to have time to detach myself, for a while, from the community that was the object of my research. This chapter is dedicated to the Sako Tulang group, who live outside of the Bukit Duabelas National Park, on its western side. The first part of the chapter will provide a short description of the group in terms of their landscape and settlement, their numbers and group composition, and their modes of livelihood. The second part of the chapter will provide the results of the collected information about food, the daily intake, and the types and origin of the food consumed by this group.

3.1 Ethnographic background to the Sako Tulang group

The Sako Tulang group lives at approximately 10 kms from the primary forest of the national park. Most of its members lead sedentary lives in rubber fields. They derive their name from the Sako Tulang River. Historically, this river was used by people as a means of transporting rubber to the village of Tanah Garo. However, the building of logging roads has led to a decline of riverine transport. Instead, nowadays motorbikes provide the preferred means of transport of rubber to Tanah Garo, S.P.A. and other destinations.

Landscape and settlement

Sako Tulang itself is a rivulet that branches off from the sub-branch of the eastern part of the Makekal River. The topography is relatively flat and the land is mainly used for rubber plantations. In addition, the terrain consists of cleared lands, scant forested area, oil palm plantations, some human settlements, small branch rivers, and roads. The area used to be a vast primary forest but has now been degraded heavily, due to logging activities. In addition, according to my key informants, the Sako Tulang area has been converted into rubber plantations from the 1970s onwards, peaking in the late 1990s. It is crisscrossed by many former logging roads which have, over time, become the main links between settlements, forest fields and plantations. These roads serve as the main entrance to the Sako Tulang settlement area and to their farm fields planted with rubber trees and oil palms. The agricultural fields of the Orang Rimba are situated close to the fields that belong to other ethnic groups such as the Malay villagers and the Javanese transmigrants. According to my key informants, about more than 20 years ago, the Sako Tulang group began settling down in the current area. The first person who settled in was a Depati who continues to be the leader of the group till the present day. He left the Makekal Hilir main river area because he had lost his son. According to the Orang Rimba custom, whoever loses a family member should undertake *melangun*. The movement follows certain cultural considerations. First, it has to be close to the river because water has a very special meaning for the Orang Rimba, simply because it is a source of living. Thus, for practical reasons and purposes, the settlement of the Orang Rimba always follows riverbanks.

The settlement of the Sako Tulang group consists of four clusters of houses divided in three segments as shown in Figure 32 below. The group is dispersed on the basis of family relationships and the fields they have cleared and that they cultivate. Almost all houses in this settlement are of the *rumah ditano* type.

Figure 33 shows the segments of the settlement. The first and second segments together cover about 10 ha of land and comprise most houses. This area also contains most rubber and oil palm fields, which belong to the Orang Rimba. The first segment warrants extra attention because the area serves as the entrance gate to the Sako Tulang group from the S.P.A. village. Four households live in this first segment. The source of livelihood for these four households varies. The Orang Rimba's sources of livelihood in this area have shifted recently. Two families rely on palm oil as their main source of livelihood, one family manages rubber fields, and one family offers their services to others by tapping rubber in

Figure 31. The landscape of the secondary forest in Sako Tulang area

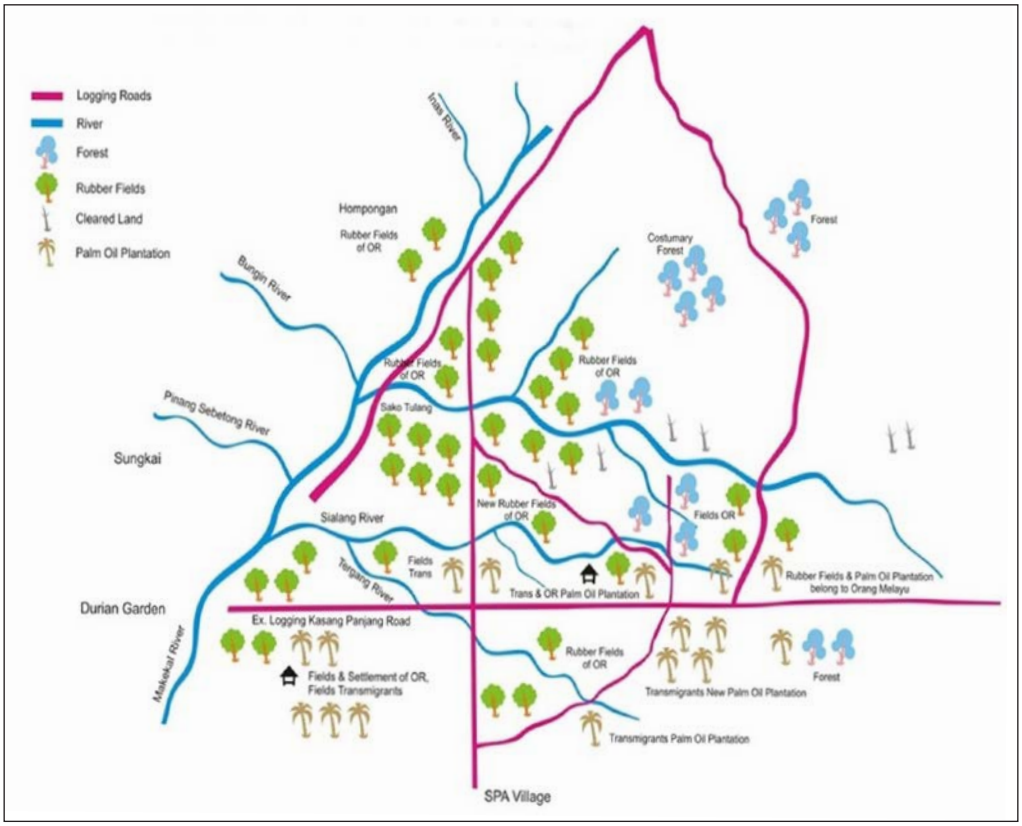

Figure 32. Schematic sketch of the area of the Sako Tulang group

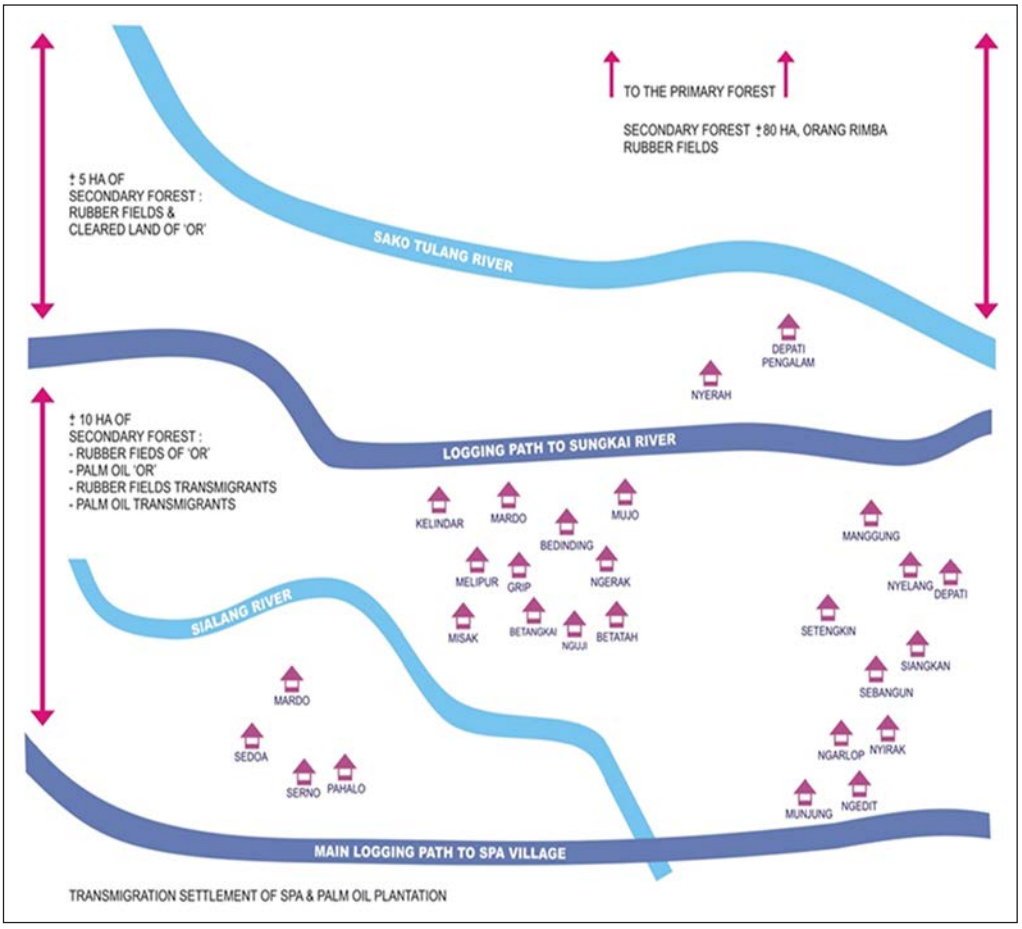

Figure 33. Detailed layout sketch of Sako Tulang settlements

their plantations. I surmise that the above conditions arose due to the geography of this area, which borders the transmigrant settlement. This proximity to transmigrant settlers influences the Orang Rimba's adoption of "modern" livelihoods that are akin to their neighbors.

The second segment of the settlement consists of two subgroups. The first subgroup is located at the center and consists of 11 households. The other is in the eastern part and has ten households. All of the households in the two groups have rubber fields and some of them own oil palm plantations varying from 1.5 ha to 10 ha. While most of the Sako Tulang households' rubber and oil palm plantations are located close to the settlement, some are also found further away, near the boundary of the primary forest. That said, it is evident that the oil palm plantations are located near the settlement as well as in close proximity of plantations belonging to the transmigrants.

The last segment, which is very close to the main Sako Tulang River, consists of only two households. One of them is a special case, because the head of the household

owns two houses, one in this area (the main house) and one in the second segment of the settlement (the additional house). This is because he owns larger fields than other members in this group. As a result, he must commute daily, back and forth between the main house (near the Sako Tulang River) and his rubber fields located in the second segment. Although it consists of only two households, the third segment is the busiest area in the group. Almost all members of this group rely heavily on the Sako Tulang River to meet their daily needs, in terms of water for drinking, washing, and bathing, as well as cleaning and storing the rubber. Living within close reach of Satuan Pemukiman A or S.P.A., one of the transmigration sites, the members of the Sako Tulang group regularly visit this village by motorbike to buy basic needs such as rice, salt, sugar, tea, coffee, snacks, and cigarettes from the local stores. In addition, the Saturday market is occasionally visited to purchase food items in bigger quantities, but also cloths (*kain*). While men and the youngsters mostly shop at the stores, women more often visit the Saturday market. The market serves as a melting pot and meeting point for Orang Rimba from across different groups. It is also a place for young Orang Rimba to meet one's future spouse.

The composition of the group

The Orang Rimba of Makekal Hilir (downstream Makekal) and the Makekal Tengah (midstream Makekal) used to be one big group. Now they live in two main groups, namely Makekal Hilir and Makekal Hulu with two different *tumenggung*. Factors including internal friction[32] and a decline in natural resources led to their splitting up into smaller groups that, today, live along smaller river branches.

Presently, the Orang Rimba of the Makekal Hilir form four smaller groups that occupy four watercourses or sub-branches of the Makekal River, namely the Sako Nini Tuo, the Bernai, the Sako Tulang, and the Sungkai (see also Table 8 below). Of these, the Bernai, the Sako Nini Tuo, and half of the Sungkai group stay within the boundaries of the TNBD, while the Sako Tulang and the other part of the Sungkai group settle outside the park.
The findings based on 2010 WARSI-BPS survey on the Orang Rimba population, followed by my own survey in 2013-2014, are reflected in the Table 8 below on a more detailed account of the demographics in Makekal Hilir area.

As Table 8 shows, in 2013-2014 the Sako Tulang group had slightly more men than women. According to the Orang Rimba custom, after getting married, a man follows his wife and stays in a house that is close to the parents of the wife. Marriage across the Orang Rimba groups is common, and usually the husband follows his wife and becomes a new member of her group. It is common for the Sako Tulang group to have cross-group marriages with the men originally coming from different groups in Makekal Hilir and the groups outside of Makekal Hilir areas, such as Makekal Hulu, Terab, Air Hitam, and the other groups.

[32] For instance, in 2012 a former *tumenggung* living along the Bernai riverbank had to cede his political powers to another *tumenggung* because he had sold land inside the national park to a Melayu landlord and used the money for his own ends. In response to his malpractices, the group decided to take action and they forced him to relinquish his position.

Table 7. Numbers of people in the Makekal Hilir groups, Tebo District, 2010 & 2014

No	Group	River/Water-course/Sub branch	Population	Men	Women	Households
1	Wakil Tuha	Sako Nini Tuo	65	30	35	13
2	Bepiun	Bernai	97	53	44	23
3	Depati Pengalam	Sako Tulang	124	67	57	26
4	Depati Laman Senjo	Sungkai	49	23	26	11
Total			**335**	**173**	**162**	**73**

Note: No. 1, 2 and 4 are based on the 2010 population survey from WARSI in cooperation with BPS, and No. 3 (Group of Depati Pengalam) is based on the author's own survey during fieldwork in 2013-2014.

Men and women have distinct roles in providing for the household's daily needs. The Orang Rimba custom (*adat*) prescribes that men (*jenton*) are responsible for providing food for households through hunting, fishing, farming, and selling their labor. Most of the men in the Sako Tulang group rely on rubber cultivation and rubber tapping as their main source of cash income. A few have also taken on the role of middlemen. Typically, men will go out in the early morning mainly to work on their rubber fields (opening land and tapping) and come back home in the evening. Occasionally, small groups of men also go out hunting for several days. Many men also take care of the children when the women are fully occupied with other activities.

Women (*betina*) typically are in charge of the domestic errands, like cooking, washing, taking care of the children, collecting firewood, and fetching water from the river. In terms of food provisioning, women have an important role because they are charged with the task of cultivating cassava (*ubi kayu*), different varieties of yam (*gadung/benor*), taro (*keladi*), banana (*pisang*), and sweet potato (*piloh*). Women are also responsible for distributing meat from hunting activities between different group members. In some cases, women also contribute to earning money by tapping rubber (see Figure 35).

Children above roughly seven years old start to learn to hunt small animals such as frogs, river snails, river shrimp, birds, and the like. They learn to hunt from the older brothers or among the children using catapults and other simple tools. They sometimes also use only their hands to catch aquatic animals. Children can explore all of the segment areas in the Sako Tulang for hunting small animals and other explorative activities, but they are prohibited to go outside the area of the group unless they have adult companions. None of the children in the Sako Tulang group go to a formal school, but there are WARSI staff members that occasionally visit them for basic teaching (such as basic reading and calculating). WARSI also has produced some cadres from the Sako Tulang group to do the teaching to the children. This is usually done in the evening after dinner. Most of children in this group are eager to learn because there is a realization among the Sako Tulang members that education is important; at least for them to have the ability to read and calculate at the basic level in order to understand the numbers and letters in trade transactions.
Since children do not go to the formal school, they have flexibility to do children's activities, which is mostly playing. But they do sometimes help their parents with domestic

Figure 34. An Orang Rimba man is taking care of his son in Sako Tulang group, 2013

Figure 35. An Orang Rimba woman of the Sako Tulang group tapping rubber in her field while taking care of her child, 2013

Figure 36. Children of Sako Tulang group eating snacks, 2013

Figure 37. An Orang Rimba bachelor is taking a rest while helping his parents to open the land for a rubber plantation, Sako Tulang, 2013

tasks. For instance, fetching water from the river and collecting fuel wood are tasks that are done mostly by the girls, while the boys mostly learn about hunting and practice skills like tree climbing. The results of hunting small animals are then sometimes consumed as snacks outside meals, and provide a source of animal protein. However, ready-to-eat snacks from the market are also consumed by children from the Sako Tulang group.

Since rubber has become important for the Sako Tulang group, children and teenagers of ten years old and above, regardless of their gender, also learn to manage rubber fields. The boys will learn how to open the land, while both boys and girls also learn to tap rubber.

Modes of Livelihood

Like other groups of Orang Rimba, the Sako Tulang group used to be hunter-gatherers who depended heavily on forest products for their living. The land that this group

uses lies in the logged-over and secondary forest, which they believe to be their ancestral territory, hence they are entitled to cultivate and use it. However, forest degradation and frequent interaction with other ethnic groups has led them to adjust their livelihood strategies. The neighboring the Malay people and the transmigrants practice shifting cultivation and they are heavily dependent on rubber plantations. The Orang Rimba of Sako Tulang have increasingly taken over this mode of livelihood to the extent that rubber is now their main agricultural product. Based on interviews with key informants, the rubber fields in this location were established between two and three generations ago. In addition, over the past ten years or so, the Sako Tulang households have also begun to establish small oil palm plantations[33].

This economic transition has had a significant impact on the group's lifestyle, including the houses they build (from *sesudungon* to *rumah ditano*) and the extent of mobility. For instance, in the traditional setting, *melangun* activities used to take between four and six years. The vast forest area meant that longer *melangun* periods were possible, during which they would fully rely on forest resources. People from the Makekal Hilir River would go as far as the Kejasung River, an area at the center of the Bukit Duabelas national park. However, as their forest area has been reduced, now the Sako Tulang group can only take, and they prefer to do so, a few weeks or a maximum of five to six months for the *melangun* ritual.

Importantly, as will be shown in detail in section 3.2, this new way of life has had consequences with respect to food. In the past, the main staple food for the Orang Rimba in Sako Tulang consisted of a variety of wild tubers like *gadung*, *benor*, *hubi kayu*, *hubi rambat*, and *keladi*, which were collected from the forest. Today, as a result of the interaction with other ethnic groups, traditional staple foods are being replaced by rice and cultivated tubers.

That said, as I will demonstrate below, hunting and fishing remain the main sources of animal protein, an indication that no significant adjustment has been made in this regard. Game includes deer, wild pigs, tapirs, and small antelopes. Interestingly, the game animals that the Orang Rimba hunt are purely for their own consumption.
Besides hunting, the Orang Rimba in Sako Tulang also engage in fishing activities. Most of the fish are caught using nets and the Makekal River is the main fishing site. Nets are used as the main tool for fishing because it is the most practical way for the Sako Tulang group to catch the fish, and it is easy to get the fishing equipment from the local market. Unlike other aquatic fauna such as large river frogs, snails, and river shrimps that usually are consumed by children and teenagers as snacks, the various fish are consumed as the main side dish for everyone in the household. After they get the catches from the rivers, they consume them immediately once they are home. They boil the catches as simply as possible using only water and a little salt; sometimes they omit the salt depending on their

[33] Even though oil palm plantation is gradually adopted by the Sako Tulang group, for them rubber plantation is still the most important source of livelihood. In this regard, I do not discuss the oil palm in detail but focus more on the rubber.

Figure 38. An Orang Rimba man prepares sticks to fix the fishing net in Makekal River, 2013

Figure 39. Rubber tree in Sako Tulang, 2014

Figure 40. Rubber storage

day's catch. For example, river shrimps are consumed after being boiled briefly without any salt because they are already tasty and delicious. The same goes for snails, except that these are cooked a little longer and with a mild amount of salt. Frogs are sometimes grilled by children in the kitchen fire; if they are on the way back home and already hungry, they will make a fire outdoor to cook the frogs.

Rubber as new livelihood

Rubber trees produce latex that is harvested by slicing the bark using a special hooked knife. With the knife (*pisau sadap karet*) a small strip of bark is cut from the trunk in a spiral flow running down the tree trunk to extract the latex. The latex runs down to a cup that is usually made of a coconut shell. The rubber latex is tapped from early morning until late morning. It is usually picked up in the late afternoon around 03.00 – 04.00 PM. The latex then has to be picked up and gathered in a small storage place on the ground. Rubber tapping is an activity that both men and women can perform.

As Table 7 shows, most households in the Sako Tulang group grow rubber and oil palm for sale, which earns them more than selling forest products or serving as menial laborers in the fields of others. This means that land becomes crucial for the Orang Rimba to maintain their livelihood. Even though they live in groups, land is managed per household. Nowadays each family in Sako Tulang considers it important to have their "own" land for rubber and oil palm fields.

Table 8. Presence of rubber and oil palm within the three segments of the Sako Tulang group

Segment of settlement	Number of households	Source of livelihood		
		Rubber	Oil Palm	Others
First segment: the entrance gate of the Sako Tulang, border with SPA Village.	4	✓	✓	Rubber tapping services and oil palm plantation
Second segment: the center of settlement area and most densely populated.	22	✓	✓	Local middlemen, rubber tapping services and oil palm plantation
Third segment: consists of the smallest population, yet the busiest area, close to the river.	2	✓	✓	Local middlemen, rubber tapping services and oil palm plantation

The Orang Rimba create rubber fields by slashing and burning parts of the forest. Rubber growing is done both inside and outside the primary forests, while oil palm growing is done only outside the primary forests. Together with my field assistant from Sako Tulang, I estimated the size of the rubber and oil palm fields per household, the results of which are shown in Table 8.

Table 9. Estimated size (ha) of rubber and oil palm plantations in Sako Tulang group in random order, 2013

Household	Rubber (ha)	Oil Palm (ha)	Total Ha (rubber and oil palm)
HH1	20	0	20
HH2	15	4	19
HH3	5	0	5
HH4	15	0	15
HH5	4	0	4
HH6	5	3	8
HH7	3	0	3
HH8	7	0	7
HH9	10	0	10
HH10	8	0	8
HH11	6	0	6
HH12	3	0	3
HH13	10	0	10
HH14	5	0	5
HH15	15	0	15
HH16	0	2	2
HH17	0	0	0
HH18	10	2	12
HH19	0	0	0
HH20	0	3	3
HH21	5	0	5
HH22	0	3	3
HH23	0	1.5	1.5
HH24	0	0	0
HH25	27	10	37
HH26	3	0	3
Total	**176**	**28.5**	**204.5**
Average	**6.8**	**1.1**	**20**

Table 8 shows that roughly 86% (176 ha out of 204 ha) is under rubber plantation and that 20 out of 26 households (77%) own rubber fields. Roughly 14% of the area (28.5 ha out of 204 ha) is under oil palm plantation, and these are owned by 8 out of the 26 (31%) households. Moreover, 15.4% of households own both rubber and oil palm fields, while 11.5% of households own neither of the two. These three households have neither rubber nor oil palm fields because they are young couples that married recently and have not yet inherited land from their parents. It is considered the obligation of parents in the family to establish fields for their children, so that when their children grow up and form families, the fields that sustain them are ready to manage.

What is further visible from this overview is that the total area planted with rubber considerably varies between households, ranging from 3 to as much as 27 ha per

household (with an average of 6.8 ha/household). This is much less the case for the number of hectares under oil palm, which ranges from 1.5 to 10 ha per household, and averaging 1.1 ha/household.
Moreover, for both rubber and oil palm, it is one household in particular (HH 25) that owns much more than most other households. HH 25 happens to be the most important middleman inside the group, with the biggest assets. The head of HH 25 is the first middleman coming from the Orang Rimba. He started his business by buying the rubber from the Orang Rimba group in Sako Tulang and then he sold it to the bigger middlemen in Tanah Garo. From there, he collected his capital to buy his own land. He managed to establish his position as one of the monopolists in the rubber business among them. Whenever he got the benefits from the business, he bought several hectares of land and he turned it into his own plantations while he still maintains his role as a major middleman within the group. Since most households have rubber fields that are quite large, often family labor is not sufficient for all the tasks that need to be performed. Thus, in those cases fields are managed using the family's own labor resources as well as by hiring the services of others to till and tap the rubber. A 1:2 production sharing arrangement is often used, whereby 33% goes to the owner of the rubber trees and 67% goes to the individual who does the tapping.

Labor is provided from within the Sako Tulang group, other groups of Orang Rimba, and other ethnic groups. In the event that fellow Orang Rimba labor is hired, preference is often given to those who are underprivileged, i.e. those without their own fields or those in vulnerable positions such as widows or orphans. Meanwhile, labor hired from other ethnic groups usually comes from the Orang Melayu or Javanese, especially migrants from the Pati region (Central Java), who have a reputation for being hard-working. Choosing the Orang Melayu is based on the consideration that this ethnic group has had close relations with the Sako Tulang group for a long time, which makes negotiations easier. This sharing of labor underscores the relatively intensive interaction between the Sako Tulang group and other ethnic groups, particularly the Orang Melayu and transmigrants.
There is also another aspect to this relationship however, which has implications for forest management. It is commonly acknowledged that once farmers from outside work on fields owned by Orang Rimba, this provides them access to the forest more generally, which then easily leads to exploitation of the forest surrounding these fields. This is likely to increase the pressures on the primary forest in the national park and intensify forest exploration and degradation.
This intensive interaction between the Sako Tulang group and other ethnic groups, particularly the Malay people and transmigrants, can lead to further complications in their livelihoods. The first complication is in terms of household economy. Their income has increased significantly as a result of selling rubber, which means that they can buy rice, sugar, and other daily requirements, with additional food coming from hunting. The group relates to middlemen who are responsible for collecting cultivation outcomes not only to obtain substantial quantities of additional food, but also for sedentary needs, as mentioned before.
A second complication is ecological in nature. The process of hiring laborers from their fellow Orang Rimba serves to even up income distribution among the Orang Rimba

groups. For those who are in a disadvantaged position, being hired offers them an opportunity to earn additional income to supplement what they get from selling their services to cultivate the rubber fields. If the frequency of such employment increases, it would reduce logging activities in the forest. By contrast, hiring people from other ethnic groups offers plantation owners an opportunity to exploit the forests and even go beyond those fields cultivated by the Orang Rimba. This is likely to increase the pressures on the primary forest in the national park and aggravate forest exploration and degradation. Gaining access to the forest gives outsiders the chance to come and go freely and identify potential trees for harvesting for commercial purposes.

In selling their rubber, the Sako Tulang people still partly rely on external middlemen, who are mostly of Malay and Javanese origin, and are located in Tanah Garo and the transmigration village S.P.A respectively. While the Malay middlemen remain the main buyers of Sako Tulang rubber, the Javanese middlemen are of interest as they usually also own small grocery stores from which the Orang Rimba can take some goods as down-payment of their yields.

However, the increase in rubber production by the Sako Tulang group and their increased experience with selling rubber has led to a rise in the number of internal middlemen. The most important middleman within the group has total assets of roughly Rp.300,000,000[34] (based on my observations and calculations). He receives rubber from his fellow group members, which he then sells to larger buyers in major cities throughout Jambi.

This middleman follows a business scheme that is similar to the previous *waris* and other middlemen from other ethnic groups. He makes a down payment (new cash) of a fixed amount to people who are willing to sell their harvest to him. In good times, he has enough rubber to take a truckload to the city of Bangko (or in the nearest town of Tanah Garo) twice a week. He takes into consideration fluctuations in prices and, if necessary, he will delay selling until he gets the best price for his produce.

There are also some old men from the group who still believe in the traditional role of the *waris* (see Chapter II). Their emotional attachment to the *waris* of Tanah Garo means that, to this day, this group remains loyal to him. They send rubber to Tanah Garo through the *waris*, even though the price they get for the rubber is sometimes lower than that offered by other middlemen. There are also members of the group who take a more neutral position and divide their rubber, selling half to Tanah Garo and the other half to the middlemen, thus getting a good price as well as maintaining their relationship with the *waris*.

With the increasing importance of rubber (and to a lesser extent palm oil) as a source of cash income, new symbols of wealth have emerged and become entrenched in society. This is attested to not only by the increased importance of land ownership, but also by many Sako Tulang group members' interest in a range of modern products, particularly motorbikes and cellphones. Households with more possessions are considered wealthy households.

The environment around the houses in Sako Tulang is typical for Orang Rimba. The *rumah*

[34] 1 USD was equal to 13,300 IDR at the time of writing. This means that this middleman had capital assets of approximately $US 22,530 at the time I conducted my fieldwork.

ditano is constructed above the ground. Under the house, there is some storage space that is used for fuel wood, daily cloths and other household equipment. Motorbikes are placed near the house. One characteristic of the houses in Sako Tulang is that a lot of rubbish is visible around the houses, most of which consists of plastics from small bags, and package material from snacks and cigarettes. One or more *kecepek* (the local shotgun) are usually located inside the house, hanging on the bamboo/wooden poles. There is no decoration in the Orang Rimba houses.

I did a survey on the assets owned by the households in the Sako Tulang group together with my field assistant. We have identified and made lists of assets in the Sako Tulang households. From Table 9 below it can be seen that most households have material possessions like motorbikes and mobile phones. Indeed, 26.9% of households own at least one phone, while 34.6% of households own several. Motorbikes are owned by 69.2% of the Sako Tulang households, with 30.8% having more than one. However, a considerable part of the households (30.8%) does not own any of these modern status symbols.

Table 10. Estimated material assets within the group per household, 2014

No.	Household	Motorbike	Hand phone	Cloths
1	HH1	0	0	150
2	HH2	0	0	400
3	HH3	0	0	300
4	HH4	2	3	240
5	HH5	3	1	154
6	HH6	1	0	150
7	HH7	0	0	75
8	HH8	0	0	90
9	HH9	2	1	240
10	HH10	2	1	190
11	HH11	2	2	125
12	HH12	1	2	200
13	HH13	1	1	220
14	HH14	1	1	190
15	HH15	1	2	130
16	HH16	1	1	310
17	HH17	2	1	260
18	HH18	1	0	320
19	HH19	1	2	85
20	HH20	2	2	170
21	HH21	0	0	135
22	HH22	1	2	125
23	HH23	1	2	180
24	HH24	0	0	60
25	HH25	2	3	350
26	HH26	0	0	45

In contrast, the traditional status symbol of cloths (*kain*) is found in all Sako Tulang households, although their numbers vary considerably. On average the households own 188 cloths, with a range from 45 to 400. Interestingly, there seems to be no relationship between the ownership of cloths and modern status symbols: the two households that own the least and the most cloths own neither a phone nor a motorbike.

Relations with the government

Although the Sako Tulang group have abandoned their nomadic life in the forest and settled down, the group is still not recognized and incorporated into the Indonesian government administrative structure. Strangely, despite the BPS-WARSI survey mentioned earlier (BPS and KKI WARSI, 2010), done during my fieldwork period, not a single person in Sako Tulang has a citizenship identity card. This implies that, unlike their fellow countrymen, they don't have any rights or obligations, nor do they have access to public services like basic education, health care, and poverty alleviation programs like the basic living allowance[35].

Nonetheless, the Sako Tulang group have been beneficiaries of various development programs initiated and implemented by the regional and central government. For instance, the Ministry of Social Affairs established the Sako Tulang Group development program, which is aimed at strengthening the capacity of the group in rubber management. Through the program, the Ministry allocated 10,000 rubber seedlings to the group in 2013. Unfortunately, as my fieldwork ended, the seedling distribution had not gone beyond the Tanah Garo village head's office, who also happens to be Orang Rimba's *waris*.

Another contradictory agenda is the plan to construct a road from the village of S.P.A. to Sako Tulang. While the district government presents this as an endeavor to energize the Orang Rimba by providing easy access to public services such as health, education and markets, the plan can also be regarded as creating a golden opportunity for the Orang Melayu and transmigrants to access the remaining forest in the western part of Bukit Duabelas. There is little doubt that if and when the construction of such a road is completed, commercial activities will increase, which will eventually lead to the reduction of the area that Orang Rimba use for hunting and gathering. The plan so far remains on the table as it is being discussed by the Ministry of Social Affairs, the Bukit Duabelas National Park authorities, and the village administration. It is worth noting that the Orang Rimba are not being consulted and hence do not play a role in the process.

3.2 Food production and consumption

The second part of this chapter presents the results on daily food intake of the Sako Tulang group and additional information acquired through interviews and observation. The collection of data on daily food intake began on 16 July 2013 and ended on 15

[35] During my fieldwork, the government of Indonesia had a basic allowance program for the poor that gives Rp 150,000 or US$ 12.5 per month to underprivileged families.

December 2013. Dietary records were kept for two households for a total of six months. With, on average, 30 days of data being recorded per month, 1,080 potential meals (540 per household) were recorded in 180 days for the two households. The aim of the data collection and analysis was to identify the kinds of food the group consumed and how the food was obtained. My assumption about the Sako Tulang group was that their food intake was mostly dependent on market products since they were in the process of shifting from food gathering to farming and to cultivating non-food crops in particular. I assumed them to be in need of cash income in order to buy food and other products.

In the analysis of the food intake data, I distinguish between the *types* of food and the *sources* of food. Food types were then broken down into sub-categories of carbohydrates, animal protein, fruits, and vegetables. Meanwhile, sources of food were divided into sub-categories of own production (fishing, hunting, gathering and cultivation), buying, and food that has been received from others through sharing.

I chose two key informants from the Sako Tulang group for collecting data on daily food intake at the household level. The first of these was my field assistant, who is the youngest son-in-law of a local leader in the Sako Tulang group, from whom he inherited ten hectares of rubber fields (of which only three hectares are ready for tapping). He also dabbles as a middleman, which is not an easy task as he has to compete with another, more prominent, middleman in the group. The second informant owns five hectares of rubber plantation; however, these were not yet fully productive. Thus, he was only selling limited quantities of rubber, and in addition he earned income from renting his land to other ethnic groups on a yearly basis, providing menial rubber tapping labor, and hunting.

Overall food intake and meal composition

Based on the observation that Orang Rimba strive to have three meals a day, the total number of *potential* meals consumed by each of the two households over a six-month period was 540 (see Table 10 below). Looking at the *actual* meals consumed, it is clear that the two households rarely skip meals: on average they consumed about 97% of all potential meals and there is hardly a difference between the two households in this respect. Table 10 further shows that of all meals, breakfast was eaten most consistently (it was never skipped), followed by dinner and lunch.

Table 11. Types and numbers of (potential and actual) meals consumed per household, Sako Tulang

Potential meals consumed	Actual meals consumed				
	Frequency			Percentage	
	HH 1	HH 2	Total	HH 1	HH 2
Breakfast (n = 180 for HH1 and HH2)	180	180	360	100.0	100.0
Lunch (n = 180 for HH1 and HH2)	168	173	341	93.3	96.1
Dinner (n = 180 for HH1 and HH2)	174	175	349	96.7	97.2
Total (n = 540 for HH1 and HH2)	**522**	**528**	**1,050**	**96.7**	**97.8**

Based on my observations, breakfast is the most important meal for the group as it provides the much-needed energy for laboring in the rubber or oil palm plantations. Men usually start their day very early and have their breakfast at 06.00 – 07.00 am. As soon as they finish their breakfast, they head to the fields to undertake crop weeding and other activities. Some of them are involved in tapping rubber on their plots, while others are middlemen or serve as laborers to other families. The activities in the field go on until late afternoon. If the wives had enough time to prepare lunch for their husbands in the early morning, a packed lunch is taken to the field. However, as the wives are also busy taking care of their children, this is not always the case. In that situation, the husbands do not eat lunch. My Sako Tulang informants preferred not to buy food elsewhere. This is not because they do not want to spend money, but because they only want to eat food that is prepared by their wives.

Table 11 provides insight in the relative presence of different food groups in all meals that were actually consumed by the two households (n = 1,050). It shows us that carbohydrates were present in almost all meals, while animal protein was part of roughly three-quarters of all meals. In contrast, fruits were never consumed as part of the main meals and vegetables very rarely were a meal component. Moreover, again, the results for both households are similar.

Table 12. Presence of different food groups in all meals consumed per household, Sako Tulang (n=1,050)

Type of food	Frequency			Percentage		
	HH 1 (n = 522)	HH 2 (n = 528)	Total	HH 1	HH 2	Average
Carbohydrate	501	511	1,012	96.0	96.8	96.4
Animal protein	383	398	781	73.4	75.4	74.4
Vegetable	9	9	18	1.7	1.7	1.7

A breakdown of these results for breakfast, lunch, and dinner again does not reveal major differences between the two households (see Tables 37 – 39 in Appendix 1). From the breakdown, it can be said that the relative importance of the different food groups is similar for the different meals.

Moreover, from Table 10, we learn that meals are rarely skipped and that on most days, meals are eaten three times a day. For most Orang Rimba eating means filling an empty stomach and satisfying their hunger. A full plate is usually followed by coffee or tea with sugar. A commonly heard expression after eating is "*kenyang ake*", which literary means "I am full". Most men follow eating time with cigarette time, while chatting with the family members.

The Orang Rimba rarely use spices in foods they cook. When meat is at hand, it is usually cooked together with cassava (if available) in the same saucepan as meat. The process of cooking meat is simple. Food processing is done by boiling, steaming, and smoking.

Composition and origin of carbohydrates

In the next two sections, I will turn to a more detailed discussion of the composition and origin of the two main food groups present in the meal record for Sako Tulang:

carbohydrates and animal protein. Taking a closer look at the subset of meals that contained carbohydrates (n=1,012), we see that rice is by far the most important, accounting for almost 58% of all carbohydrate intake in meals (Table 12). This is followed by cassava, which contributes just under one-fourth of all carbohydrate consumption in meals. Finally, wild tubers and other starchy foods (including sago) are least important, although they still contribute almost one-fifth of the total carbohydrate consumption in meals.

Table 13. Types of carbohydrate of all meals consumed by the two households, Sako Tulang (n = 1,012)

Type of carbohydrate	Frequency	Percentage
Rice	584	57.7
Cassava	238	23.5
Wild tuber and other starchy food	190	18.8
Total	**1,012**	**100.0**

This pattern corresponds well with the origin of the different types of carbohydrates (Table 13). Unsurprisingly, the majority of carbohydrates is bought from the shops and the markets in the nearest village such as S.P.A. This is to be expected since the Sako Tulang households consume rice on a regular basis, but do not grow rice themselves. However, they do grow cassava, which is visible from the corresponding figure in Table 13, which shows that the root-crop harvested from the garden in practice is always cassava. All homesteads are surrounded by cassava plants (*betong hubi*) and households also easily share their cassava harvests with each other. Thus, tubers are the second most important staple food, after rice. Every component of the plant is used: the root (*akar*) is eaten as a staple, the stem (*betong*) is used as firewood, and the leaves (*doun*) serve as vegetables. Cassava is also an important emergency food during the lean months, alternatively known as the *remayo* season. Whenever the group runs short on money to buy rice as the main staple food, they often fall back on their cassava as the substitute of rice. The same situation applies when hunting and fishing have not been successful or whenever their yields of commercial crops drop. Since cassava is very easy to plant and also requires little labor in terms of weeding, this plant is also very useful during the *melangun* period. Cassava is always planted near the settlements of the Orang Rimba, whether they practice *melangun* or not. In addition to its importance as food, cassava is strategically used to mark territorial boundaries. My informants explained to me that they deliberately create small *hompongon*[36] of cassava hedges to protect their territories from pressure by outsiders.

Wild tubers and other wild starchy foods (such as starch obtained from some kinds of palms) are obtained in two main ways: either they are directly collected from the forest, or they are received as a share of someone else's gathering activities in the forest ('given' in Table 13). If we combine these two, the total contribution of carbohydrate-rich foods originating from the forest adds up to just over 17%.

[36] Usually, *hompongon* consists of rubber trees but cassava is sometimes also used.

Table 14. Origin of carbohydrate of meals consumed by the two households, Sako Tulang (n = 1,012)

Origin	Frequency	Percentage
Buying	597	59.0
Collecting from the forest	101	10.0
Harvesting from the garden	238	23.5
Given	75	7.4
Unknown	1	0.1
Total	**1,012**	**100.0**

Another important note on the carbohydrate intake in the Sako Tulang group is that rice and/or tubers are often prepared as a porridge, which is enjoyed by both adults and children. Salt or sugar are added to the porridge, and if meat is available this may be included too. Cooking porridge is not a laborious process and is typically done when nobody is out in the field or forest. Cassava needs to be soaked, cleaned, and pounded before cooking it.

Composition and origin of animal protein

The second major food group present in the Sako Tulang food record is animal protein, which appeared in a total of 781 meals (74% of all meals consumed). The composition of this food group is highly varied, consisting of ten main categories[37] in the case of Sako Tulang (Table 14). In addition, the category 'combination' includes a combination of either wild pig and fish, or wild pig and snake.

Interestingly, freshwater fish is the main source of animal protein. While this category evidently consists of a large number of individual species, their identification was beyond the aim of this study. Aside from fish, rivers also provide another important source of animal protein to the Sako Tulang households, namely freshwater turtle. Taking these two categories together, freshwater fauna account for over two-thirds of all meals with animal protein intake. The remainder consists of larger and smaller terrestrial mammals (notably wild pig, hedgehog, and deer) as well as snakes.

Based on my observation in the Sako Tulang group, the majority of fish eaten came from fishing rather than from the market. The settlement is situated close to the Sako Tulang River, a rivulet of Makekal River, which is abundant with fish. It is less than a one-hour walk from the settlement in Sako Tulang to the river. A fishing net is usually set out in the late afternoon, and when it is pulled up the next morning it usually contains a large number of small and medium-sized fish. In addition, fish is also incidentally bought from the Saturday market or from the fish ponds belonging to transmigrants in S.P.A.

Fishing is better in the dry than in the rainy season. The fishing season runs from June to September, with a peak in August, while the period from October to December shows a drastic decline. During the transition month of September and October, when the water level in the river starts to rise, the Sako Tulang group shifts towards hunting, which is continued until the end of the rainy season. However, even in June-July, hunting regularly

[37] See Chapter VI for a full list of animals consumed per group.

happens. This was especially the case in June 2013, during which I saw many husbands from Sako Tulang leave their families for about three to four days per week to engage in hunting trips in remote areas, going as far as the border between Riau and Jambi provinces.

Table 15. Types of animal protein of all meals consumed by the two households, Sako Tulang (n = 781)

Type of animal protein	Frequency	Percentage
Fish	459	58.8
Wild pig	106	13.6
Freshwater turtle	57	7.3
Hedgehog	39	5.0
Snake	37	4.7
Deer	30	3.8
Mouse deer	6	0.8
Bird	2	0.3
Frog	2	0.3
Lizard	0	0.0
Squirrel	0	0.0
Rat	0	0.0
Primate	0	0.0
Other	33	4.2
Unknown	10	1.3
Total	**781**	**100.0**

Note: There is usually only one type of animal protein in any meal without combination with the other types of animal protein.

Looking at the origin of the various types of animal protein (Table 15), over 65% of it is derived from 'own production', namely through fishing and hunting. In addition, a large share is received from others as a share of their fishing and hunting catch. There is a strong sense of communality among the Sako Tulang group. This is manifested in the sharing of foodstuffs, especially wild animals from hunting activities, by those who have enough with those who face shortages.

Sharing food among households is meant to ensure that the household that gives out food to others today will in future have certainty of food from those householders that are beneficiaries of the offer. Moreover, sometimes proceeds from hunting are too large for a single household to eat even if efforts are made to preserve it. The contributor expects households that receive the contribution to do the same when time comes for the giver to have food shortage. During *melangun*, meat is sometimes shared by an Orang Rimba group who are not in a *melangun* period and who have enough meat to share.

I witnessed the following example of food sharing during my fieldwork in 2013. At that time, my key informant and three fellow Orang Rimba went to stay at the Bengkulu border to hunt. They spent three nights in the camp and came home bringing a large snake as a result of the hunting. Because the snake was big, they divided it into pieces. The wife of my key informant distributed the meat into several baskets, and kept a large amount

of the meat for her own household for several days, and then distributed the rest to the members of the group. All of the group members experienced having meat that according to them was the most delicious meat ever. Even though all of the group members had enough meat for several days, there still was a substantial amount of meat left that could be shared beyond the group. My key informant then allocated the remaining meat to his mother's family residing in a different group the next day.

The dependency on food sharing is greatest during periods of scarcity, caused by a prolonged dry season or while doing *melangun*. These often induce the Sako Tulang members to seek help not only from within the group but also from the other groups that still have close ties with the members of the group, for example from the nearest group: the Sungkai group. Sometimes, they also ask help from transmigrants or Malay middlemen, with whom the Sako Tulang group have good relations and some of whom provide goods such as rice, cigarettes, sugar, salt, and instant noodles on credit, which is repaid after harvest.

In sharp contrast to carbohydrates, almost none of the animal protein is obtained by purchasing it. The Sako Tulang group have a strong taboo on eating domesticated animals. That is why, even during lean periods, they do not eat chicken, cow, or goat meat, nor even eggs. In exceptional cases, and only if they can afford it, they eat canned fish. Thus, we can conclude that forest-based fishing and hunting activities generate almost all animal protein that is consumed by the Sako Tulang households.

In terms of food preservation, there are some techniques applied by the Orang Rimba. The most common one is known in local terms as *salaue*. *Salaue* is one of the ways the Orang Rimba preserve their foodstuffs, which includes smoking, cooking, and fermenting. It is a traditional method that makes it possible to keep the meat for several days. Cooking slowly over a fire for many days, inducing it to rot, also preserves animal protein.

Table 16. Origin of animal protein of meals consumed by the two households, Sako Tulang (n = 781)

Origin	Frequency	Percentage
Hunting	153	19.6
Fishing	359	46.0
Given	222	28.4
Buying	6	0.8
Others	31	4.0
Unknown	10	1.3
Total	**781**	**100.0**

Vegetables and fruits

The Orang Rimba rarely eat vegetables. They are not fond of it and they are also not aware of the nutritional value of vegetables. Even though wild vegetables are widely available in the forest, consumption of vegetables is limited to the cassava leaves that grow in gardens. Incidentally, so-called "smelly forest beans", which grow locally on a tall tree called pete, are also eaten.

With respect to fruits, as for the Orang Rimba in general, the Sako Tulang group mostly consume fruits during the fruiting season38. Fruits are rarely consumed as part of main meals, but if fruits are available from their gardens, in the forest or on the market it may be eaten as a snack. However, when the fruiting season comes, fruit becomes the main food for the Orang Rimba. Examples of such fruits are durian and rambutan. Interestingly, the members of the Sako Tulang group are fond of fried banana (pisang goreng) which can be bought on the Saturday market in S.P.A., but they do not like fresh banana as a fruit.

3.3 Conclusion

The Sako Tulang group enjoys relatively adequate food intake in terms of quantity and quality. Meals are regularly eaten, with 97% of all potential meals being consumed. There is also considerable variation in food consumed, with abundant carbohydrate and protein intake. Food is obtained from various sources: by buying it, by collecting/hunting/fishing, and by growing it in their own gardens.

It is evident that rice is the dominant staple that is consumed by households in the Sako Tulang group. This finding is in line with my earlier assumption that the Sako Tulang group is dependent on market products and cash income. In this group, most of the households rely on rubber plantations as their main source of livelihood. It is not surprising therefore that there is a shifting pattern of staple consumption from traditional tubers to rice. Group members use the income they obtain from selling rubber, and other economic activities that generate cash, to buy rice. Even though rice is indeed the dominant source of carbohydrates, it is followed by tubers as the second most important staple. In the wet season, meat is abundant, due to successful hunting. In the dry season, the Sako Tulang group depends heavily on fish, *labi-labi* (freshwater turtles), snakes, and tortoises, which live in dry riverbeds.

Based on general observation during the fieldwork, the Sako Tulang men, women and children make a relatively healthy impression. The youths, especially, are relatively tall and athletic, while only few people, notably elderly, are thin and appear less healthy. It seems to me that the Sako Tulang group do not really experience hunger and that they are reasonably food secure as a result of their continued ability to hunt, while they also manage to adopt a sedentary farming life and become middlemen.

Sharing is an important element of food security for the group. This practice is in line with Headland findings (1986, 1987, 1991) on how hunter-gatherers use a reciprocal food sharing system. In his dissertation in 1986, Headland mentions the importance of food sharing among the Agta, including commodities such as rice and subsistence crops like cassava and sweet potato (Headland 1986: 424). Headland has observed for the Agta that “the best place to store food is in other people’s stomachs” (Minter and Headland in press).

Cultural and geographical landscapes define the Makekal Hilir Orang Rimba groups, who in general have close ties with the Orang Melayu. A patron-client relationship has evolved between the groups in the course of history, which continues with some adjustments

[38] See Chapter I (methodology section) for an explanation of the limited presence of fruits in the daily food intake records.

to this day. Living closer to Orang Melayu groups than the upstream and more mobile groups of the Makekal Hulu area, the Sako Tulang group has more exposure to a sedentary lifestyle and swidden cultivation (*bertalang* or *membuka hutan*) and they have themselves become sedentary.
Living within close reach of the Bukit Duabelas National Park and the transmigrant settlements, the Sako Tulang group strategically makes use of the opportunities offered by both the forest and the nearby markets. The transmigration settlements of S.P.A. and Tanah Garo serve as a place to sell rubber and non-timber forest products, for liaising with the *waris*, for buying basic needs and for making use of public services, such as health clinics.

Living on the forest margins, the Sako Tulang group continues to combine a hunter-gatherer lifestyle with that of sedentary farmers. The Sako Tulang group relies on fishing and hunting to meet their protein requirements and use the income they earn from rubber and oil palm to supplement these wild foods with commodities they purchase from villages.
The social and natural landscape in which the Sako Tulang group lives, outside the national park, but not far from the transmigration settlements, provides them flexibility in obtaining their food products, enabling them to switch between heavily depending on natural resources and purchasing food.
Rubber is the key commodity for the Sako Tulang group and it has a significant impact on the lifestyle, the cultural identity and the food security of the group. This is because rubber, unlike the traditional crops that they used to gather and grow, can be sold and thus generates cash, which has become increasingly important. In relation to rubber, there are two crucial periods that are associated with *remayo* season (hardship period) for the Sako Tulang group. First, the period before they owned rubber fields and cleared land for planting. The Sako Tulang group considers land-clearing as very demanding in terms of labor and capital. The second period occurs when tapped rubber prices decline. During such periods of hardship, the Sako Tulang group depends on relatives or fellow Orang Rimba. Mutual support and assistance among the groups help them to overcome financial difficulties and they are also a source of cohesion that mitigates the severity of a crisis. Even though some of the households have relatively stable fields, they are still in the process of expanding the existing fields in order to maintain stability of the rubber harvest in the long run.

Two kids in Terab posing for a picture near their compound, 2015

IV The Terab Group: Outside the Forest

My heartbeat increased a bit the first time I met the Terab group. Once again, the member of the WARSI staff who has been a vital source of help during my fieldwork offered me a ride. We reached the Terab group on a sunny afternoon after a four-hour ride on a creaking motorbike from Bukit Suban to Air Hitam. Thankfully we reached our destination in one piece. The Terab group is located in the eastern part of Bukit Duabelas. The journey took about six to seven hours from Jambi city. From the city we headed directly east towards Pauh District, a Malay settlement that is home to growing numbers of incoming transmigrants from Java. From the Pauh road, a public highway, we headed towards the impressive gate to the industrial complex of PT. Era Mitra Agro Lestari (PT. EMAL), a giant palm oil company that once belonged to the Bakri Group, but today is under the control of the Sinar Mas Group, one of the major agro-industrial companies in the country. Numbers of small trucks loaded with palm pits were waiting outside to pass the gate.

Having passed PT. EMAL's complex, the only thing to see was oil palms, forming a never-ending display of greenery. The only people we met along the winding and dusty road were a few laborers tasked with maintaining the plantation. Once in a while, we passed other motorbikes belonging to the Orang Melayu heading to and from the plantation area. Later, I was informed that some of the Orang Melayu we met along the way were coming from their rubber fields, which had been planted in the secondary forest located along the border zone of the Bukit Duabelas National Park. Access to these fields is only possible by passing through the plantation. Leaving the oil palm plantations behind us, we reached the 6,800 hectares of land that belong to PT. Wana Perintis, a *Hutan Tanaman Industri* (HTI) or Industrial Timber Estate. The first time I passed the area, which was in mid-2012, it was an empty and desolate landscape bereft of any vegetation and with hardly any trees. There were only a few isolated forest patches, awaiting their fate to be razed to the ground by chainsaws and a fleet of bulldozers on standby in the area.

We stopped near a small compound in the bush, right in the middle of the cleared piece of land. We were greeted by a man poking his face through tree branches. The man had closely cropped hair, was holding a cigarette and wore a loincloth. He said only a few words of hello to my friend using *Beso Rimba* (Orang Rimba language). Slowly, behind his back, other men, women and children approached us, hesitantly.[39] Their fear subsided after my friend introduced me to the man, who later shook my hand while saying my

[39] It is not as difficult to meet the Orang Rimba nowadays as it was in the past. Previously, coming across the Orang Rimba was extremely difficult, let alone having a chance to talk to them as they were often suspicious and distrustful of others. Now, everything is completely different. Even though they remain suspicious of outsiders, due to the dynamics of the situation they find themselves in, interaction with strangers has become inevitable. This is especially true for the Terab group.

name, an act that perhaps convinced the other men dressed in loincloths to join the fray. I introduced myself to them and explained the purpose of my visit and the objectives of my PhD research. The man, who is the *tumenggung* of the Terab group, welcomed me warmly. To this day, his words still linger in my mind:
"You are very welcome here in our group. We are glad that there is someone who has a deep concern for our lives. Only a few people share similar concerns. As you can see, we live surrounded by an empty land. It (the empty land) used to be our forests, *tanah peranoon*,[40] our children's playground, a place for us to hunt the wild animals. But now, all is gone. The company [HTI] took it away and turned our lands into a rubber plantation. I know that your intention here is to learn our way of life, our *adat* (customs). But in return, I expect you to send our message to the world about our conditions." (translated by the author)

The words of the *tumenggung*[41] have in part shaped and inspired my research. The *tumenggung* is a quiet person. He rarely speaks to others, either to his own people or to outsiders. Nonetheless, he commands a lot of respect from his people. That is why once he says a word, others treat it with great respect. I learned that he is considered to be the wisest man in his community.
Right from the start, I wondered why the Terab group resides outside the forest, more so considering the reality that they still wear their traditional Orang Rimba outfits, consisting of a *kancut* or *cawot* (only a loincloth) for the men (children up to adults), a topless loincloth for married women and a *kemben* (a loincloth that covers the body from chest down to the knee) for unmarried women (see Chapter II). In fact, nowadays it is extremely rare to find the Orang Rimba men wearing only loincloths and the Orang Rimba women going topless outside the forest. Even though the Orang Rimba still consider that wearing loincloths is part of their identity as the Orang Rimba, in most cases such outfits are only used while they are inside the forest or just among themselves. Otherwise, the Orang Rimba who live close to other ethnic groups wear clothes that cover their bodies. In this sense, the Orang Rimba try to give respect to other cultures while they are not in their territory (forest). It is worth noting that the Orang Rimba are highly respectful of other cultures and expect that other ethnic groups understand and respect their culture as well. One manifestation of this is wearing a full body cover cloth when they are outside the forest in order to adjust and respect other people's cultures. The wearing of such a cloth while outside of the forest is also a symbolic action, as the cloth signifies protection in the

[40] *Tanah Peranoon* literally means the land/the place for giving birth. It is one of the Orang Rimba's sacred lands. It is usually located in a separate part of the compound but still near the fields where they work, which, in the current context, is *ladang/kebun* or garden/plantation. The place is chosen by the family of a woman who is about eight months pregnant. The place is designed as a temporary home for the mother until she gives birth. For the Orang Rimba, the birth process is very important as it combines great blessings from the gods and the danger of delivering a baby for a mother. The Orang Rimba see the birth of a baby as their opportunity to carry on their existence. On the other hand, delivering the newborn is a battle between life and death for the mother. The moment is very crucial because the Orang Rimba believe that the deities and bad spirits will clash in a fight for possession of the baby. This is why they make a special and sacred place, to avoid the bad spirits that can take away the newborn and to welcome the deities to protect the baby.

[41] The *tumenggung* of the Terab group passed away in 2015 due to ill health. He has been replaced by the new *tumenggung* that is in charge up to date. For the purpose of this dissertation, however, all stories, data, and information concerning the leadership or *ketumenggungan* are related to the late previous *tumenggung*.

outside world. Thus, it is likely that the way the Orang Rimba dress as I witnessed during my fieldwork in the Terab group is a deliberate attempt to underline their identity vis-à-vis the non-Orang Rimba society. Moreover, what is even more confusing is the fact that the Terab group stay outside the forest, which is not very far from the Terab River - their original location before they adopted a nomadic lifestyle outside the forest.[42]

This chapter aims to describe the current condition of the Terab group living outside the forest and the reasons behind this situation. The first part of this chapter, which serves as a background for the second part about their food situation, provides a short description of the Terab group, including their settlement and mobility, the composition of the group, the modes of livelihoods, the change of livelihood sources that are more depending on the cash crops plantations (rubber and oil palm), as well as their interaction with the outside world. The second part is focused on the core of the dissertation: food production and its consumption.

4.1 Ethnographic background to the Terab group

Landscape, settlement, and mobility

The Terab group currently lives in a landscape that is dominated by oil palm and rubber plantations that belong PT. Sinar Mas and HTI Wana Perintis. Originally, the Terab group used to follow the course of the river Terab, inside the forest. Today, the group is more widespread and lives both inside, as well as outside of the park. One of the main reasons why the Terab group is very mobile is because of *melangun*. Their main roaming area is in the area of HTI Wana Perintis, and in some cases they also stay inside the oil palm plantation. The HTI company obtained permission to manage the land in 1997 and since then it has been involved in clearing the forest to plant rubber trees. During my fieldwork, some rubber trees were ready for harvesting, but the rest of the land area was completely cleared of all trees. The permission to do so came from the Ministry of Environment and Forestry (previously the Ministry of Forestry, before they merged) and specifically stipulates that it applies to secondary forest.

Even though currently the Terab group prefer to live outside the park most of the time, NGOs, other ethnic groups, government officials and other parties describe them as representatives of the 'genuine' Orang Rimba who still preserve their traditional ways of life (Aritonang, 1999). This is reflected for instance by the extent to which they pay attention to details of customs and traditions in a way these were practiced by their ancestors in the past. In addition, the group is very mobile. During my fieldwork in Terab from 2012 to 2015, for example, they moved 15 times,[43] as part of the rituals of *melangun* and caused by a need to adapt their modes of production. For this reason, it is difficult to count the total number of the Terab group because the number is always changing. The

[42] The watershed of the Terab River is partly located inside the national park and has abundant forest resources, ranging from big trees, *sialang* trees to harvest honey, wild animals, fish in the river, and edible plants.

[43] I was able to follow their movements during *melangun* on six of these 15 occasions.

Figure 41. Landscape of the Terab group dominated by the plantation areas

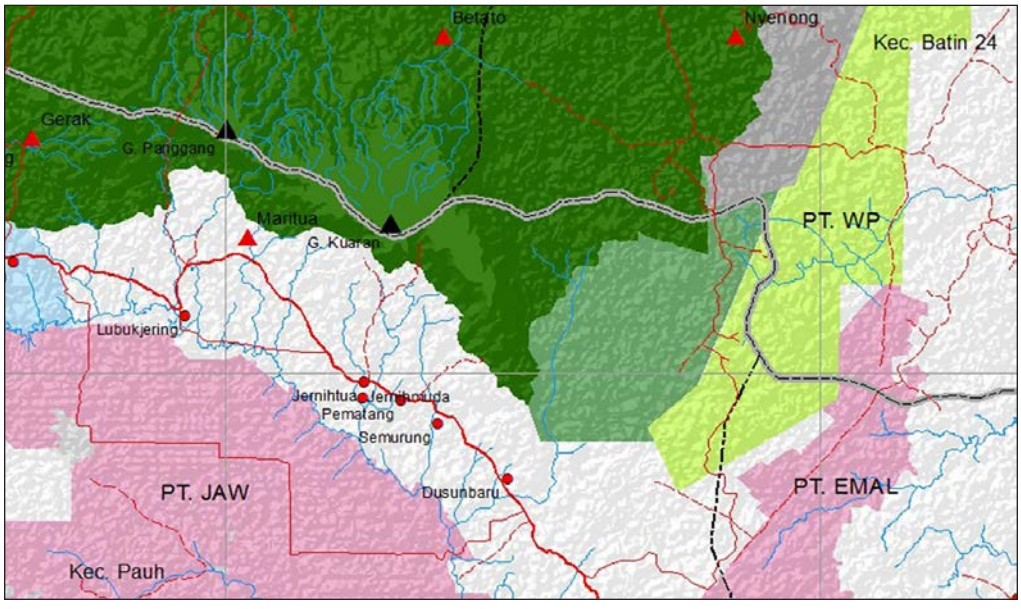

Figure 42. The location of the Terab group in the eastern part of TNBD
Source: WARSI's map adapted by author, 2012-2014
Notes: the red dots are the resettlement areas for the other ethnic groups and the red triangles are the resettlement areas of the Orang Rimba. The Terab group is located in the red triangle dot under Maritua.

Figure 43. One typical house, a *sesudungon*, of the Terab group

size of their population ranged from 150 to 339 people during the entire time span of my fieldwork.
To be accurate, the map below shows the locations of the Terab group. Since the group is actively mobile, the movement of the group follows the locations of the other ethnic groups located, particularly in the red dots as provided in the map below. This especially happened during the melangun activities in 2015.

The dark green area shows the Bukit Duabelas National Park, which, based on calculations by the Indonesian Ministry of Forestry, stretches for some 60,500 hectares in total. The area covered in light green indicates the buffer zone of the park, which is designated for management by the community around the forest. This area is usually called secondary forest. Meanwhile, the lime green color shows the area that belongs to HTI PT. Wana Perintis and is used for a rubber plantation. The pink areas are the lands covered by plantation companies (PT. EMAL and PT. JAW) and Orang Melayu settlements. The light grey color indicates the community forestry area or *hutan desa*. As we can see from the result of the satellite map, many villages that have been formed as a result of transmigration already occupy *hutan desa* in this area. The settlements along the Air Hitam river belong to the Orang Melayu, namely Dusunbaru, Semurung, Pematang Kabau, Jernihmuda, and Jernihtua. All of them are old villages and were already mentioned by an explorer in the beginning of the 20th century (Van Waterschoot van der Gracht 1915). Based on this demographic composition, we can see that the Terab group is surrounded by secondary forest, *hutan desa*, commercial plantations (oil palm and rubber), and the settlements of other ethnic groups. The interaction of the Terab group with people of

other ethnic groups has become unavoidable. Further on in my analysis, I will discuss how this interaction to a large extent defines the cultural, social, political and economic conditions of the Terab group internally and externally.

Typical of the Orang Rimba in general, the Terab group in particular still preserves the way of life they inherited from their ancestors. The most vivid example is the way they build their 'lean-to's (*sesudungon*) (Figure 42 and Chapter II). Today, the roof is made of plastic materials rather than leaves. The underlying reason for such a practice is that the Terab group maintains a more nomadic lifestyle than other Orang Rimba groups. Using the plastic roof seems more practical when living in the plantation areas. The houses are very close together and form two rows facing each other. The houses also serve another function: separating parents with small children from young unmarried women and young bachelor males. Moreover, the pattern of houses is based on the kinship relationships. The unmarried youngsters stay close to their parents and the nuclear family, while the extended families stay not so far away from the nuclear families. The 'lean-to's or small huts that the people build fit the mobile lifestyle. Usually, they do not stay long in one place. They move in search of food or because of social reasons.

Moreover, a high mortality rate is another reason that the Terab group is so mobile. The death of a group member triggers *melangun* and a movement to a new location. For instance, members of the Orang Rimba that I worked with during my first fieldwork in 2012 had to move to another location in 2013 due to the death of a group member, who passed away due to an acute liver disease.[44] Following his death, the four groups divided according to the *melangun* tradition. The Terab group moved to Block C4 of the oil palm plantation, the Serenggam Group moved to the HTI area, Kejasung Kecil 1 and 2 returned to the Kejasung River areas, and some of the group members moved to the surrounding area of Bukit Tiga Puluh National Park on the border between Riau and Jambi Provinces.

The composition of the group

Taking into account the fluidity of members, my analysis in this chapter focuses on the Terab group under the leadership of its major *tumenggung* during my fieldwork of 2013-2015. Other factors that affect the dynamics of the group will be complementary to this focus.

During my first visit to the group in mid-2012, I saw a large group of people, but I learned later that the large population was because three other groups with a different *tumenggung* had joined the Terab group under the leadership of the Terab *tumenggung*. Even though the *tumenggung* was in charge of the large group, it did not mean that he was the overall leader of the four groups; instead, each *tumenggung*, according to the Orang Rimba custom, is 'responsible' for his own group. Table 16 provides detailed information about the spread of Orang Rimba in Terab in 2012.

[44] This person was one of the members of the group that decided to move out to the Malay residency, he married a Malay woman and converted to Islam. Even though he was not living in the group anymore, he was still considered one of them; and they still conducted the *melangun* tradition for him. This diagnose was based on a medical examination at Sarolangun Hospital.

Table 17. Location of the groups and total number of households & population in Terab, 2012				
No	**Location**	**Group**	**Number of households**	**Number of people**
1	PT. EMAL area	Serengam	10	36
2	Terab river	Serengam	5	18
3	PT. EMAL area	Kejasung Kecil 2	8	42
5	PT. EMAL area	Terab	17	79
6	Sako Kasai river	Terab	12	43
7	Terab river	Terab	1	3
8	SDM palm oil plantation	Terab	1	7
9	Kejasung river	Kejasung Kecil 1	21	111
Total			**75**	**339**

Source: census by WARSI and author recapitulation, 2010 and 2012

The outcome of my first visit was later confirmed by the latest census on the demographics of the Orang Rimba in 2010, which was conducted by Statistics Indonesia (BPS) in cooperation with WARSI. The total number of people in Terab was 339 divided over 75 households. The large number of people in the Terab group as mentioned previously was a consequence of the coming together of the Terab group with the Serengam group, the Kejasung Kecil 1 Group, and the Kejasung Kecil 2 Group.

Later on, as my fieldwork continued, the total population of the Terab group in the last stage of my fieldwork was 150 people divided over 26 households, 19 out of which in the HTI area and oil palm plantations. Some households moved to the Bukit Tiga Puluh area. It is well known among the Orang Rimba that the Bukit Tiga Puluh area is a place for the Orang Rimba immigrants from Bukit Duabelas (especially from the Terab group) and Pamenang. Some of them are displaced from their original locations as a form of punishment for mistakes they have committed in their previous locations, while some live in the area in search of better conditions, looking for a new place to earn an income or for hunting or other sources of livelihood.

Modes of livelihood

Since the Terab group regularly moves in and out of the forest, they have adopted several sources of livelihood. Even though during my field work they spent most time outside the forest, non-timber forest products (NTFPs) were still the major source of livelihood both for their subsistence requirements and to earn money to fulfill their needs. This section discusses the modes of livelihood of the Terab group in the present situation that includes the collection of honey, rattan, dragon blood, and *damar*.

Time and again, my informants stressed the importance of honey[45]. Honey is more than just a commodity for the Orang Rimba; it has cultural and social importance as well. Moreover, the tree that hosts the bees is also of great value to the Orang Rimba.

[45] For further reading and comparison of honey for the Orang Rimba, see Sandbukt (1988), 'Resource Constraints and Relations of Appropriation among Tropical Forest Foragers: The Case of the Sumatran Kubu', *Research in Economic Anthropology*, Vol. 10: 117-158.

Honey and the honey tree are seen as inseparable. The most important honey tree is the *sialang* tree, a species of *Kompassia excels*. The *sialang* tree is also known as *kedundung/ kedundong*, *kruing*, *pulai*, *kayu kawon*, and *par* in local parlance. It is one of the highest tree species inside the Bukit Duabelas Forest, as well as one of the most preserved resources for the Orang Rimba.

The *sialang* tree has such importance and significance among the Orang Rimba that it is considered to be equivalent to the life of a person, or worth 500 loincloths in the Orang Rimba trade and exchange system. An individual *sialang* tree belongs to and is managed by the first person to find it. Upon finding the tree, the founder marks it by using a specific initial cut by a knife in the tree to indicate to other members that he is the owner. Once the tree has the small initial cut, no other person would dare to approach it. However, according to Orang Rimba customs, the *sialang* tree actually belongs to a woman of the household, even though it is usually a male who finds it first. If somebody apart from the owner destroys or harvests the honey without permission, a fine of 500 loincloths or relinquishing an unmarried daughter to the original owner of the tree is imposed.[46] Thus, harvesting honey from a s*ialang* tree that does not belong to you means incurring a debt to the owner.

The Orang Rimba refer to honey as *mani rapa*, meaning miracle and sacred (*bedewo*). According to them, honey is derived from blooming flowers and is brought to the trees by the bees on their heads, wings, and legs. Based on the Orang Rimba stories I heard, *rapa* (the big bee) has its origins in Kerinci Mountain, which has a special guard. The guard is believed to be a very tall white man with red eyes and a very tough and hardened face.[47] During a journey taken by the *rapa* and the guard, they stopped to rest (*perhention*) under a *sialang* tree inside the forest. Since that time, the bees have always returned to the *sialang* trees and produced honey every year, especially during the rainy season from October to December.

Harvesting honey is an important ritual in the lives of Orang Rimba men and requires a lot of skill and a lifetime of practice. The activity is also a measure of the respect a man commands from his elders and the women. The skill that is required is not only limited to climbing the tree, but also how the men treat the trees, the bees and the honey in spiritual terms. It is an exclusively male job that is replete with sanctity. The honey-bearing tree is treated as a young virgin female, which is why the climber is required to say some mantras (*pantun*) in effect asking for the permission of the girl (*sialang* tree) to climb it to get the honey and come back to the ground safely. All the rituals are done in a conscious manner to respect the tree, the bees and the honey. Harvesting honey is always done during nighttime.

In one harvest expedition, the Orang Rimba can collect as much as 20 kilograms of honey in a single comb if the weather is good. However, if the weather is not good, the Orang Rimba can only harvest about seven to ten kilograms in one comb. The *sialang* tree often

[46] Ibid.

[47] Many experts on the Orang Rimba believe the man is similar to the Dutch who came to Sumatra in the seventeenth century (based on interview with WARSI staff).

hosts many bees' nests, providing an abundance of honey during the honey season. The honey is very nutritious, providing a lot of energy and having a delicious, natural taste. No wonder the Orang Rimba have vast experience in determining whether or not it is good honey, and have developed ways of preserving it that enables them to sell it to other ethnic groups outside the forest. I learned, however, that not many outsiders want to buy the honey from the Orang Rimba because they are unsure about the hygiene of the honey that the Orang Rimba harvest. In that case, the Orang Rimba prefer to store the honey for use during periods when honey can no longer be harvested. The Orang Rimba store the honey by putting it into used bottles.

Unfortunately, I did not witness the practice of harvesting honey during my fieldwork. However, I heard many stories from my key informants and learned that many of them are highly skilled at climbing *sialang* trees. In 2006, the Terab group was forced to forego honey harvesting temporarily due to the death of one of their members. He was one of the best honey harvesters among the Terab group. The death was regarded as a bad omen (*kesialon*) for the group, which is why, since that fatal incident that occurred while on a honey-harvesting expedition, the Terab group has distanced itself from *sialang* trees inside the Terab forest. In the last ten years or so, the group prefers to stay outside of the forest, either in the buffer zone of the national park or in the plantation areas, where it is more difficult for them to practice honey-harvesting.
Some of my key informants informed me that the quality and quantity of the honey collected are also declining. This may be attributable to land conversion. Moreover, the Terab group fears that an absence of *sialang* trees will result in the bees vanishing and along with them, the honey. The Terab group realizes that they cannot always depend on the honey to fulfill their need for sugar and sweets. To that end, people have resorted to exploiting other modern sources of sugar to meet their daily energy needs. The sugar consumed by the Orang Rimba nowadays is the refined sugar that is available in the market and the nearby transmigrant stores.

Another tradable NTFP that the Terab group collects is a particular species of rattan called *manau* (well known as *manau*). *Manau* is a very important raw material for furniture-making and it is of higher quality than other species of rattan[48].

Manau can only thrive in dense forests and in Jambi *manau* is in abundance in the Bukit Duabelas National Park and its secondary forest area. *Bermanau* or collecting *manau* is a social activity that requires onerous efforts. One piece of *manau* is between two to three meters long and can be sold for IDR 7,000 – 9,000 or $US 0.53 – 0.68 per piece, depending on the size and quality. The Terab group sells *manau* collectively. Indeed, if one Terab group joins up with other groups, around 500-800[49] pieces of *manau* can be collected,

[48] At the macro level, Indonesia is the largest supplier of rattan in the world, and contributes to meeting 80% of the world's demand for the commodity. More than 90% of the commodity comes from forests in Sumatra, Sulawesi and Kalimantan. In a typical year, Indonesia produces about 23,000 tons of rattan (Pusat Informasi Kehutanan Provinsi Jambi 2015).

[49] The average annual *manau* production in Jambi is around 58,000 pieces, based on calculations by Dinas Kehutanan Provinsi Jambi (2015). I believe that most of the supply comes from the TNBD forest.

depending on the number of people involved in the harvesting process. The middlemen involved in *manau* transactions are either Orang Melayu or transmigrants.

Men are responsible for collecting *manau,* a process that usually takes about one to two weeks, starting from identifying the location, transporting, and selling it to the middlemen. Meanwhile, women are charged with managing or weaving raw *manau* to make household implements such as *ambung* (small storage places), *tikar* (mat), and *tongkat* (walking sticks) for the elders. Only a small percentage of the *manau* is used for domestic needs, while most is sold to supplement their income from other sources. In some other cases, the women also join the men to collect and transport the *manau* even though on a smaller scale and not on a regular basis. Harvesting *manau* is based on both external and internal factors, such as demand from the middlemen, the ability of the group to look for, harvest and transport *manau*, and the willingness of individuals to do a *bermanau* job. Another important NTFP for the Terab group is *jernang* or dragon's blood (*daemonorops hygrophilus*). This rare commodity is obtained from the seeds of a particular species of rattan and has a very high monetary value due to its benefits. In fact, *jernang* has the highest economic value of all NTFPs in the national park. The final product from *jernang* includes but is not limited to sedatives and various medicines for treating diarrhea, cancer, and rheumatism. In addition, *jernang* can serve as toothpaste and as dye for various industries (ceramic, stones, timber, paper, paint, and cosmetics). During my fieldwork, I once witnessed a Terab member selling *jernang* for around IDR 800,000 or $US 6,01 per kilogram to middlemen. Harvesting *jernang* is very laborious work, which is perhaps why it is an exclusively male job. It is also a seasonal activity that takes place once a year, usually during April to June. The *jernang* rattan stem is a communal possession and belongs to all Orang Rimba. That said, destroying or cutting the stem constitutes a violation of *adat* and is punishable by a fine of 120 loincloths. During my fieldwork, I learned from one of my informants that the highest collective harvest in 2013 among the Orang Rimba groups occurred in Tanah Garo registering a value of 0.5 tons of *jernang*. Such value is equivalent to IDR 400 million or $US 30,040. Meanwhile, for the Terab group, the normal average value per individual/household is 0.5 kg or about IDR 400,000 or $US 30.00 per harvesting activity.

Damar[50] or the resin of particular *dipterocarp* trees plays an important role as a commodity for exchange among the Terab group. However, a recent decline in demand has led to a drop in the amount that the Terab group collects. Besides being a tradable commodity, *damar* serves as an important source of light or traditional light/torches. The introduction of modern flashlights (*senter*) has, however, gradually replaced the use of *damar*. *Bedemor'* or collecting *damar* is a unisex job among the Orang Rimba, meaning that everybody can do it, ranging from children, men, and women to elders. However, the low prices for *damar* have reduced the importance of this commodity as a source of income; indeed, today it is a commodity of last resort, and only harvested when there are no other options to earn an income.

[50] *Kelongkung*, to borrow the local term.

Figure 44. An Orang Rimba in Terab with his collected *damar*

The Orang Rimba collect *damar* during the rainy season. The activity is complementary to the efforts to look for other exchange commodities and collective work among the Orang Rimba. This is especially so for the Terab group, who collect *damar* that is black in color. It is different from the *damar* that other groups of the Orang Rimba collect in Makekal, which is white and known as *damar mata kucing* or cat-eye's *damar*. The black dammar or *damar hitam* have the lowest price at IDR 2,000/kg or $US 0.15/kg compared to *damar mata kucing* (IDR 13,000-20,000/kg or $US 0.98-1.50 /kg). In April 2013, the group collected four tons of *damar* earning a total of IDR 8 million or $US 600.80 for the members of the Terab and the Serengam groups involved. The highest earn was around IDR 500,000 or $US 37.55 because of its contribution in terms of manpower in one household. Meanwhile, the smallest share of the earnings in one household was IDR 50,000 or $US 3.76 due to limited human resource to collect it.

The Orang Rimba's Malay neighbors often pick up/buy *damar* and serve as middlemen for the Terab group. The middlemen in the neighboring villages sell *damar* to larger traders based in Jambi city. I had the opportunity to ask middlemen in Pauh about the process, and I was informed that if they could sell *damar mata kucing* directly to Lampung,[51] this earned them prices that were as high as IDR 20,000/kg or $US 1.50/kg compared to the low price of IDR 17,000/kg or $US 1.28/kg they get from Jambi city traders.
The HTI area that the Terab group live in today used to be primary forest or *rimba bungaron*,[52] borrowing a local term that refers to many aspects of the Orang Rimba's land use, ranging from *tanah peranokon*, children's playgrounds, to dwellings and gardens.
I heard from an NGO activist, who witnessed the process of land conversion, that HTI had cleared the land with some of the Orang Rimba's knowledge. The company certainly had all the legal documents to manage the land in a proper manner. Moreover, the clearing process was facilitated by the connivance of some Terab elites. These elites got compensation for serving as guides or assistants, showing the company's workers which trees could be cut. During my fieldwork, I also heard that the elites still get 'monthly compensation' from the companies occupying HTI and PT. EMAL. Every month, the elites visit the company to draw their monthly salary for 'doing nothing'.[53] The monthly salaries paid to the leaders of at least four groups have been detailed as follows: Each *tumenggung* (IDR 2 million/month or $US 150.20/month), and all of their assistants (IDR 1.5 million/ month or $US 112.65 /month) each. The transaction is done only with the leaders, without consultation with the other members of the group.

Besides the above 'contribution', plantation companies also hire the services of other members on an irregular basis, depending on need. The services and fees are negotiated between the companies and employees on a daily or weekly basis. Work usually involves providing security guard services for company bulldozers. The fee is around IDR 25,000/

[51] Lampung is the neighboring province to the east of Jambi Province.

[52] The Orang Rimba have specific classifications of land use, such as garden and bare land (*ladang*), garden with five-year yields (*sesap*), mixed garden with ten-years yields (*belukar*) and multipurpose forests (*rimba bungaron*).

[53] I got this information from a Malay neighbor with a very close relationship to the Terab group. He has a rubber plantation in the buffer zone of the TNBD and is trusted by the Terab group.

day or $US 1.88 /day for an eight-hour day. Sometimes, companies also hire the services of members of the Terab group on a monthly, part-time basis, costing them about IDR 500,000/month or $US 37.55 /month per worker. Such relationships offer immense benefits for companies, since these payments ensure protection of their property in the forests. For example, suppose a conflict arises between companies and the communities[54] or between the companies and the government, the companies will "use" the Orang Rimba to protect their interests. Companies, especially HTI, usually employ the services of the Terab group whenever they are involved in clearing land. Having the Orang Rimba as their security guards definitely secures their intended purposes to clear the land. There is no specific timeline for the company to clear the land but they do it regularly throughout the year.

Meanwhile, the Terab group "uses" their customs to derive other benefits in the form of fines imposed on other ethnic groups and/or on companies. Any contravention of the Orang Rimba's customs may lead to various fines. Such incidents are frequent; during my fieldwork, I witnessed many. One example was about a misunderstanding involving researchers from Jambi University, who conducted research on the socio-economic changes affecting the Orang Rimba. Apparently, one of the researchers was not sufficiently aware of the Orang Rimba's customs. While doing an interview, the researcher accidentally sat in the house of the *tumenggung*'s daughter. Those who know Orang Rimba customs are aware that to do such a thing will lead to unfortunate outcomes. Based on the knowledge I have gathered, in the event of such an act, women often scream very loudly, which is quite common in the Terab group. They demanded that the researchers pay *denda adat* or a 'custom fine' because of the violation that the researcher had committed against MM's daughter. In the end, the researcher had to pay a fine of 25 loincloths to MM. I also witnessed incidences when the Terab group tore cameras from journalists and researchers for accidentally taking pictures of Terab women, which is a violation of their customs.

Based on the discussion on the modes of livelihood above, it can be said that the livelihood patterns of the Terab group are as depicted in the table below, which shows the dynamics and developments in the livelihoods of the Terab group during my fieldwork.

Table 18. Livelihood sources of the Terab group

Activities	Month	Type
Hunting	Anytime throughout the year	Depend on the personal ability
Betalang	Anytime throughout the year	Depend on the personal ability
Collecting honey (Bermadu)	October to December	Seasonal
Collecting manau (Bermanau)	Anytime throughout the year	Depend on the demand of middlemen
Collecting jernang (Berjernang)	April to June	Once in a year (seasonal)
collecting demar (Berdemor)	April to May	Seasonal
Providing labor	Anytime throughout the year	Regular and part time basis
'Selling customs' (denda adat)	Anytime throughout the year	Regular and part time basis
Collecting fruits	The end of the year	Seasonal

[54] Orang Melayu and/or Orang Transmigran.

Palm oil as a new source of livelihood

It was during my third visit to the Terab group in early October 2013 when I joined them in their new activities in the oil palm plantation. During my first visit, one of my key informants informed me that the Sinar Mas group (PT. Sinar Mas) had taken over PT. EMAL (the previous owner of the oil palm plantation), which had belonged to the Bakri Group since January 2013. PT. Sinar Mas is one of the leading companies managing oil palm plantations in Indonesia[55].

As mentioned earlier, some elites of the Terab and other Orang Rimba groups received monthly salaries from the previous company (PT. EMAL). After the takeover, this practice continued under the new company (PT. Sinar Mas). To that end, in the short term, the takeover may be good for the group, at least economically.

The company is only allowed to exploit secondary forest. In February 2013, the Sinar Mas group discovered that Bakri Group had violated the law by using part of the land that did not fall under their concession in the order of 20,000 hectares that should belong to HTI Wana Perintis. As the largest and best-managed company, PT. Sinar Mas did not want to take any risk by managing land plagued by disputes. To that end, the company lodged a report with the Ministry of Environment and Forestry.[56] After deliberations and communication, HTI did not want the land either because it was already planted with oil palms, and they claimed that the land did not fall under their jurisdiction, either. The land then became *tanah tak bertuan* or 'lands that belong to no one'. Since the oil palm plantation was ready for harvesting at the time, this created problems with neighboring villages, especially some Malay communities. The location of the land is tricky because geographically it belongs to the Pauh District, but administratively it is part of the Mandiangin District. The dispute between the two Malay groups arose over which of the two had rights to the land. The dispute was intense and sometimes resulted in physical conflicts. By the time I finished my fieldwork in March 2015, the dispute remained unresolved, with some of the Orang Melayu Mandiangin still occupying the land in Block C5, while the Orang Melayu from Pauh were occupying the area in BC4.

A further interesting question then emerged: What was the position of the Orang Rimba in the disputes? Inevitably, the Orang Rimba were being exploited, but they also exploited the situation to their advantage. After tedious negotiations with the two Malay groups, the Orang Rimba were assured of the right of access to a number of hectares of the disputed land in the area between BC4 and BC5. After another long internal negotiation among

[55] PT. Sinar Mas Agri-Resources and Technology (SMART) is Indonesia's largest palm oil-based consumer product group that has vertically integrated operations. It is the largest oil palm plantation group in Indonesia and the second largest in the world, with a total of 460,000 hectares or about 5.5% of Indonesia's oil palm plantations. The company booked net sales of IDR 32,341 billion or $US 2,429 million in 2014 with annual growth of 35.1% compared with the previous year (PT. SMART Tbk 2015). Their end products include cooking oil, margarine, shortening, specialty fats, frying fats, ice cream fats, butter oil substitute and cocoa butter substitute. Thus, it is not surprising that following many internal problems, the Bakri group decided to sell some of their assets to the largest palm oil group in Indonesia.

[56] Based on Agrarian Law of Republic Indonesia No. 5 year 1960, forest in Indonesia belongs to the government and the government has the rights to maintain use of secondary and primary (protected) forest. In this sense, the Ministry of Forestry is the implementing institution handling forestry issues.

Figure 45. The inevitable interaction between Orang Rimba with the non-forest dwellers. A tractor collecting oil palm fruits passes by a hut of Orang Rimba along the road, Terab, 2013

the Orang Rimba, the 50 hectares of mature oil palm fruits were divided between 200 households in four groups, namely the Terab, the Serengam, the Kejasung Kecil 1 and the Kejasung Kecil 2 groups. Every *tumenggung* received six hectares, while other *penghulu* (high-level political positions) received five hectares, and the rest got 0.5 hectares for each household.

Apparently, the no-man's land had brought new economic opportunities for the Terab group. Even though the interaction they have had with other ethnic groups and the use of money has opened up new possibilities for them in recent decades, the access they have to 'ready to harvest fruits' creates yet another new opportunity. Tools such as harvesting sticks, fruit baskets, fruit scales, and transportation trucks have become commonplace and standard equipment. The Terab group members are no longer hunter-gatherers who are highly dependent on forest products. On the contrary, the group members have, by and large, become farmers on no-man's land that used to be their roaming territory and home.

Interaction with the outside world

Since the Terab group mostly lives outside the forest, they are familiar with the use of money, and today they depend heavily on products that are sold in stores and markets, such as food, clothes, mobile phones, motorbikes, gold in the form of jewelry, and other necessities. This implies that they have to earn money to do so. Some of them rely on

the NTFPs as the main source of livelihood and to earn money, the rest serves as laborers for other ethnic groups or their fellow Orang Rimba, or they become laborers for the plantation companies. The work they do includes clearing land, collecting palm fruits and tapping rubber. Even small children participate in such activities. In return, labor is paid for with free meals for the day, usually consisting of rice, cassava, sardines and instant noodles. Some of them also get small cash payments.

The nearest market is in Pauh Village, and there are also small kiosks in the plantation areas. However, based on my experience, the Orang Rimba buy products at far higher prices, either in Pauh or at the small kiosks, than those paid by people from other ethnic groups. Whenever I bought any merchandise at the kiosks while in the company of the Orang Rimba, I paid steep prices, which was rather different from when I accompanied someone from an NGO, for example. There are many such asymmetric relationships between the Orang Rimba and other ethnic groups.

Money can be considered to be part of a relatively "new culture" for the Orang Rimba in the Terab group and they are still adjusting to this phenomenon. Once received, money is often immediately spent on things such as groceries, loincloths (*kain*), motorbikes and mobile phones. The local term for this is *belanjokon sen kanti*, which literally means 'selling' your money as soon as you get it.

Motorbikes and mobile phones are classified as practical tools for the group in the new environment as they facilitate their economic activities. Motorbikes are a crucial mode of transportation, while mobile phones are important for communication. For some people, these two new technologies make their lives and economic activities easier. For instance, some members offer their services as *ojek* drivers (motor bikes for rent) for people travelling to and from the community, such as NGO workers, activists, researchers, and people from other communities like the Malay and the transmigrants. Mobile phones are used for communicating with middlemen about the demand for and prices of NTFPs and oil palm fruits.

Moreover, the acquisition of modern things has become a status symbol and a sign of wealth. In some instances, the Terab group members do not have sufficient knowledge about how to manage, service or maintain such modern acquisitions as motorcycles and mobile phones. Thus, any technical fault that affects the item sometimes leads to its abandonment and a financial loss to the owner. It is not uncommon to find motorcycles abandoned in the middle of plantations simply because they are out of order and the Terab owners do not know how to repair them. The Terab group often calls on the assistance of their Malay neighbors in these circumstances.

Another indication that possessing modern things is taking a toll on the Terab group members relates to possessing and servicing mobile phones. Initially, the Orang Rimba were not aware of the fact that mobile phones needed charging for continual use. Having learned that this is the case, they often trek to Pauh just to charge their mobile phones, which is a very long distance. Ownership of modern things also instills confidence and pride in the youths who feel they give them some status in front of their own people as well as in their interaction with other ethnic groups. Such a perception was revealed when I posed the question about why they consider owning motorcycles and other modern items such as mobile phones as important. The response was always that, when they have

such items, they are treated with more respect and accepted as equal members of society, both among their own members as well as among those of other ethnic groups.

The growing importance of possessing modern items among the Terab group members has increased their dependency on money. Whenever they are short of money, they have become accustomed to borrowing it from middlemen, a practice that increases their dependency. One of the consequences of this increasing dependency on money is that the Terab group often foregoes buying foodstuffs in order to buy modern items, which adversely impacts on their food security. This points to another asymmetrical relationship between the Orang Rimba and the middlemen. The middlemen use these situations to secure the dependency of the Orang Rimba in term of commodity exchange. The middlemen usually make a down payment in the form of money, cigarettes, rice, instant noodles and other consumptive goods. By doing so they lock the Orang Rimba into this unequal exchange process while the Orang Rimba have generally little bargaining power in this process compared with that of middlemen and other parties.

Smoking cigarettes is another new norm that has been introduced to the Orang Rimba through their interaction with the outsiders. Currently, smoking relatively cheap cigarettes has become an important pastime hence a requisite product that, whoever wants to interact with the Orang Rimba, must be provided. Almost all Orang Rimba men, including the young ones, in every location smoke cigarettes.[57] In the case of the Terab group, not only men, but also married women smoke cigarettes, although to a lesser extent than the men. Women who smoke are very uncharacteristic of other groups of Orang Rimba in other locations.

The Terab group men smoke roughly one pack of 12 cigarettes per day, both when they are healthy and when they are unwell. They justify their chain-smoking habit by saying that if they abstain from smoking their lips become sore and they easily get hungry. When money is short, they prefer buying cigarettes over food. According to them, smoking reduces their hunger pangs.

Sugar is also consumed in large quantities, mostly when drinking tea or coffee,[58] when roughly a third of a glass contains sugar. When money is available to buy sugar, tea or coffee is consumed in the morning, afternoon or evening. My observation is that the Terab group's love for sugar in tea is because it neutralizes any bad odor and the color of impurity-laden water. The only option they have is either to drink very sweet tea or not to drink at all.

During my fieldwork, I often heard that water is *jehot* or very bad so they could not drink it safely, as used to be the case when they lived inside the forest where there were abundant supplies of clean water from springs or small brooks. While living in the forest, they did not have to boil the water because it was pure. Unfortunately, this practice persists despite living in an environment that is rather different from what they left behind inside

[57] One of my fellow NGO workers cracked a joke on the connection between cigarettes and the Orang Rimba. According to him, outsiders who want to have the opportunity to talk to the Orang Rimba must give them cigarettes as *bakon* (trade or souvenir) prior to doing so, or else one can forget about hearing a single word from them. While the analogy my friend made seems hyperbolic, knowing the facts on the ground, I have to admit that it has a grain of truth.

[58] Unlike other groups in other locations, the Terab group prefer tea to coffee.

the forests. This means they do not boil the water they get from rivers or small streams in the middle of plantations and they drink it directly, regardless of possible contamination from chemicals and other impurities. It should be noted, however, that, to date, there has been no scientific research on the impurities in the water that flows in the rivers and streams that cross the plantations in Central Jambi. That said, according to medical doctors at local hospitals and WARSI's health officers and other activists, there is no doubt that water in the plantation areas is contaminated with chemicals (fertilizers and pesticides) used in the plantations.

Sickness

In term of health-related issues, the Orang Rimba have their own cosmology. They believe that there are many causes for their illness, the most common being devils, interaction with the Orang Terang (the non-forest dwellers), and the fruit season (*petangungan godong*), the time, once every two to three years, when the fruits are abundant. As mentioned in Chapter II, during the fruit season, the Orang Rimba enjoy eating fruits and honey with limited combination with any staple foodstuffs. Consumption of sweet and sour fruits for a protracted time adversely impacts their health, their stamina plummets and they often become prone to coughs, fever and other illnesses.

Diseases that are common among the Orang Rimba include chickenpox (*cacar aek*), coughs (*betuk*), flu (*betuk slemo*), and cholera (*gelira*). The Orang Rimba believe that the diseases that afflict them are brought to them by the Orang Terang who live in downstream settlements (*hilir*). The Orang Rimba are very afraid of the aforementioned diseases due to the bitter experiences they have had whenever an outbreak occurs. The diseases often culminate in many deaths. To that end, the Orang Rimba are extremely wary of making any contact with the outsiders, especially to those with whom they have not interacted within the framework of economic and social relations.

The Orang Rimba treat sick persons in a very specific way. The sick, whether individually or in a group, are isolated from other members of the group. A specific place is established where the sick stay and they do not have contacts with healthy members of the group, a practice that is aimed at preventing the spread of illness. The practice is known as *cenenggo* or *bercenenggo*[59].

With regards to the Terab group, members of the group often suffered from illnesses during the period I stayed with them in the course of my fieldwork. The groups constructed a temporary shelter that was at least a kilometer away from the main compound. While in their temporary shelters, the sick persons search for and prepare the food they eat. In the event the sick are unable to search for and prepare their food, the responsibility is given to one or two members of their nuclear families. However, there are also occasions when the disease is so contagious and virulent that almost all members of the group are sick. Being a close-knit society means that diseases spread rapidly in the group. Once a member of the group falls ill, he or she is isolated from other members, until the person is well again. This is another reason why the number of members in any group fluctuates from time to time. Being confined in a relatively small environment, if

[59] Being isolated or self-quarantined.

compared with the vast stretch of territory the Orang Rimba used to live in in the past, might provide another explanation for the high incidence of illnesses among the Orang Rimba.

Based on my observations, the causes of illness among the Terab group vary, and range from child malnutrition, poor hygiene and lack of clean water to inadequate food in the households. My conclusion is corroborated by information from a medical doctor whom I met during my fieldwork in October 2013. She was an employee of Pauh Medical Center, which is under the jurisdiction of the district health office, and worked in cooperation with WARSI. The doctor, along with WARSI staff, paid regular visits to the Orang Rimba, especially the Terab group, to check on the state of their health. The NGO is committed to collaborating with government institutions that are charged with delivering basic services to the general public as well as the Orang Rimba groups.

With respect to health, the Terab group is one of the most fragile groups among the Orang Rimba. Based on information from an NGO employee in the health division, the Terab group has both a high mortality and a high birth rate. The most vulnerable are children under the age of five. There is often a very small age gap, sometimes of only eleven to twelve months, between children. This means that the young children are often not breastfed by their mother for very long. As a result, young children are forced to eat the same food as the adults, which makes them vulnerable to all kinds of diseases that are attributable to insufficient nutrition.

The 2015 hunger crisis

During January and April 2015 there was massive and extensive news coverage regarding the Orang Rimba and especially the Terab group. Reports said that hunger and starvation had resulted in the death of 14 people (mostly children). The case went beyond being a regional issue and reached the central government in Jakarta. It was a serious problem for the newly elected Jokowi government, especially given the fact that during the election campaign Jokowi pledged a strong commitment to promoting, achieving and sustaining food sovereignty for all Indonesians. Jokowi's government, and in particular the Ministries of Social Affairs, of Environment and Forestry, and of Health, were under significant pressure to resolve such issues. Among other national media (daily journals as well as weeklies) that published the incident are *the Jakarta Post*, *Kompas*, and *Tempo* in their newsfeed in early March 2015[60]. Instantly, the incident of the deaths of the Orang Rimba brought together the authorities. Doubtless, thanks to the massive media coverage in early March 2015, the government at all levels have sprung into action, belated though it turned out to be.

The deaths of 14 people evoked the interest and concern of many parties who were involved with the Orang Rimba. As a result of the unfortunate but avoidable incident, the Terab group moved to 14 different places between January and April 2015.

The incidents brought some new awareness within the Terab group about their lifestyle choices. However, they still persist in remaining outside the national park. It is clear that whenever they move during *melangun*, they always avoid going back to the forest. Recognizing such a tendency, I began to wonder why the Terab group is trying to avoid

[60] For example: Tempo 2 March 2015, Kompas 4 March 2015, The Jakarta Post 9 March 2015.

their original livelihood. However, on close observation, I have discovered political as well as ecological factors that have influenced the decision.
From the political point of view, the movement of the Terab group is conducted within the framework of their customs, which requires them to always be close to their *waris* (guardians), which, in this case, is the Orang Melayu that live in the area of Ulak Kemang Village. By staying close to their *waris*, they secure their access to economic resources. The second consideration is that, by doing so, Terab group members can maintain their role as forest watchdogs, preventing encroachment of other parties into the area. The Terab group is aware of the plantation companies because of their dealings with official institutions such as the Ministry of Environment and Forestry. This reduces the chance of companies engaging in practices that break the law on land grabbing in the national park. Nonetheless, the Terab group has little control over the threat that the Orang Terang (smallholder farmers from other ethnic groups) pose to their livelihood. Their expansion into the forest areas is gradual, which begins with occupying secondary forest and, over time, starts to encroach and endanger the national park. Moreover, by staying outside the forest, the Terab group has access to fast and sufficient information on the movement of their farming neighbors. Another reason why the group stays outside the forest is because they still maintain the oil palm plantation in 'no-man's land'.

On 12 March 2015, the local government authorities in Jambi Province under the direct command of the Indonesian Army, in collaboration with local NGOs and media, paid impromptu visits to the village of Ulak Besar in the district of Batang Hari, a place for the Orang Rimba to practice *melangun*. The following day, the Minister of Social Affairs, Kofifah Indar Parawansa, paid another visit, which was aimed at conducting a dialogue with the Orang Rimba. While there, the Minister asked the Orang Rimba questions aimed at uncovering the reasons and causes that had led to deaths, and obviously the underlying factors that have contributed to the worsening of living conditions for the Orang Rimba. Later, the causes of the deaths were confirmed as diseases in the longer dry season, malnutrition, and polluted drinking water in the plantation areas. However, by the time the Minister bid the Orang Rimba farewell, she recognized that the fundamental cause of the problem lies in the confined living environment that the Orang Rimba currently have. She promised the Orang Rimba that they would be granted rights over land that is currently part of PT. Wahana Perintis rubber plantation, giving them about 114 hectares for use as a customary village.

The Orang Rimba have long demanded that the plantation company (in this case the rubber plantation/HTI that is located on the border of the national park) return ownership of the land to them, because it belonged to the groups prior to the designation of the area as part of the national park. From the perspective of the Orang Rimba, the plantation company's claims to the land are exaggerated and manipulated, since it belonged to their ancestors. Nonetheless, the company maintained its claim to being the rightful owner of the land arguing that it had informed the Orang Rimba of its intention to clear the land for rubber plantations beforehand. The fact is that the land managed by the plantation company lies outside the national park. Nonetheless, the establishment of the national park is a recent development compared with the awarding of land concessions by the

Indonesian government. Consequently, the area that the Terab group calls home, which lies mainly to the east of the national park, has been diminished over time. It is thus not far-fetched when some sources, including those that have a keen interest in the fate of the Orang Rimba, attribute the hunger to fundamental problems that have driven the Orang Rimba from being people with a place they use to call home, to virtual 'squatters' on land that belonged to their ancestors.

4.2 Food production and consumption

This section will provide a closer analysis of food consumption among the Terab group in the period that preceded the above-described crisis. The analysis is based on data collected between 1 September 2013 and 28 February 2014. One of the households was able to finish the complete data collection on dietary food intake. As explained in the methodology, the other one could not manage to finish the complete six months of data collection because, unfortunately, the head of the household passed away in the middle of the data collection. Consequently, my comparative analysis of data from the Terab group is varied, based on a six-months period for one household and a two-months period for another. Thus, the specific dates for data collection used on daily food intake for the two sample households ranged from: (a) 1 September 2013 to 28 February 2014; (b) 1 September 2013 to 31 October 2013.

The first sample was a *menti*'s household. *Menti* is a position within the Orang Rimba political structure that is mainly about dealing with the outside world. He is one of the Orang Rimba with a relatively high level of literacy. In addition, he was one of my key informants, and he played the role of my field assistant in the Terab group. Before choosing him, I previously worked closely with the *wakil tumenggung* or Deputy of Chief, currently as a new *tumenggung* after the previous *tumenggung* passed away. However, in the middle of my research, the *wakil tumenggung* and some other households moved to other locations away from the main compound of the Terab group. Even though he was still a key informant, he was excluded from the sample households for the record of the daily food intake. With respect to the political situation, *menti* represents one of the elites of the group who has a 'more stable' income. Meanwhile, the other household in the Terab group was a representative of the households with a limited source of income. The late head of my second household was an elderly or *rerayo* (the respected Orang Rimba elderly), without a political position in the group. However, as he was one of the elderlies, he knew a lot about the culture of the Orang Rimba.

Overall food intake and meal composition

The Terab group represents the most mobile community of the Orang Rimba in terms of strict adherence to the traditional *melangun* way of life. The results of the data collection, which are based on records obtained during the periods of the dietary food intake survey, show the meals that were actually consumed by both households in relation to the number of potential meals (Table 18).

Because the sample size varies for both households due to special circumstances, the

total number of *potential* meals consumed by each of them differs. Whereas the first household managed to finish the intake record of the whole period with 540 *potential* meals, the second household only managed to finish the intake record over a period with 180 *potential* meals.

Table 19. Types and numbers of (potential) meals consumed per household, Terab

Potential meals consumed	Actual meals consumed				
	Frequency			Percentage	
	HH 1	HH 2	Total	HH 1	HH 2
Breakfast (n = 180 for HH1 and n = 60 for HH2)	132	46	178	73.3	76.7
Lunch (n = 180 for HH1 and n = 60 for HH2)	149	47	196	82.8	78.3
Dinner (n = 180 for HH1 and n = 60 for HH2)	180	60	240	100	100
Total (n = 540 for HH1 and n = 180 for HH2)	461	153	614	85.4	85.0

Table 18 shows that the *actual* number of meals consumed during the survey by the two households was 614. On average the households consumed more or less 85% of *potential* meals. Dinner is the most important meal for the Terab group. It was never skipped during the survey, while breakfast is the least important meal for both households with a frequency of less than 80% of all *potential* meals. With regards to the importance of lunch, the differences were not very big.

Table 19 shows the presence of the different food groups in the *actual* meals consumed. Carbohydrate was the food group most often consumed. On average, it was present in nearly 90% of the meals. The second most important food group was animal protein, which was present in nearly 64% of the meals. Fruits and vegetables were the two food groups that were least present in the meals consumed by the two households, with an average of less than 3%.

Table 20. Presence of different food groups in all meals consumed per household, Terab (n=614)

Type of food	Frequency			Percentage		
	HH 1 (n = 461)	HH 2 (n = 153)	Total	HH 1	HH 2	Average
Carbohydrate	407	138	545	88.3	90.2	89.3
Animal protein	312	91	403	67.7	59.5	63.6
Fruit	29	6	35	6.3	3.9	5.1
Vegetable	6	6	12	1.3	3.9	2.6

A detailed breakdown of the composition of breakfast, lunch and dinner show that the above trends are consistent throughout the day, with no major differences in the presence of specific food groups between meals (see Tables 40-42 in Appendix 2). Moreover, similar to the group discussed in the previous chapter, the two households in Terab show no

particular differences in terms of the composition of breakfast, lunch and dinner. However, there was one remarkable difference in the presence of vegetables during lunch. The first household had lunch without vegetables, while the second household consumed vegetables during about 10% of their lunch meals.

Composition and origin of carbohydrates

Based on the intake data, it is evident that the types of staple food for the Terab group include rice, cassava, taro, and wild tuber (and other starchy food). Rice is the most consumed carbohydrate by the two households. It is consumed in over 50% of all meals containing carbohydrate (n=545). Cassava is the second most important source of carbohydrate, with a percentage of more than 41%, followed by taro (7%). As the Terab group was mainly living outside the forested areas, the consumption of the wild tubers and other starchy food has become less important. This type of food contributes very little to the consumption of carbohydrate by the households.

Table 21. Types of carbohydrate of all meals consumed by the two households, Terab (n = 545)

Types of carbohydrate	Frequency	Percentage
Rice	276	50.6
Cassava	225	41.3
Taro	38	7.0
Wild tubers and other starchy food	6	1.1
Total	**545**	**100.0**

Based on my interviews, and while digging deeper into food preferences and choices by the various age groups of the members in households, it became clear that there is a difference between food that the younger generation consumes and that for adults and/or the elderly. Adults and the elderly showed a preference for traditional types of food as a means of fulfilling their carbohydrate needs, that is, tubers instead of rice. For them, the satisfaction after eating rice lasts for a shorter period of time before they feel hungry again. In contrast, after eating tubers, the satisfaction they get lasts from morning until the evening. That saves them the trouble of having to eat three times a day. The younger generation, on the other hand, shows a preference for rice over cassava and other types of carbohydrate. More specifically, since the younger generation can avail of a cash income more often that the older generation, they can also afford to buy rice instead of having to search for tubers themselves.

With regards to carbohydrate sources, the results of the survey show that buying is the most important way to obtain carbohydrate, followed by harvesting from the garden (see Table 21 below). Nearly 55% of the carbohydrate consumed comes from the market, and more than 41% of carbohydrate is the result of their garden. Only about 2% of the total carbohydrate consumed is sourced from the forest, while only just over 1% is obtained from others. This demonstrates the Terab group's dependency on the market in general and on rice in particular.

Figure 46.
Kids in Terab catching a frog for dinner

Table 22. Origin of carbohydrate of meals consumed by the two households, Terab (n = 545)		
Origin	Frequency	Percentage
Buying	299	54.9
Collecting from the forest	13	2.4
Harvesting from the garden	225	41.3
Given	7	1.3
Unknown	1	0.2
Total	**545**	**100.0**

Composition and origin of animal protein

The variation in the sources of animal protein among the Terab group is quite large, and ranges from fish to primates (Table 22). Lizard was the most consumed animal during the period of data collection, followed by wild pig, fish, squirrel, snake, hedgehog and a

number of other wild animals. The options of the Terab group that were available given their location, relatively far from the forest and closer to the plantations (oil palm and rubber), were limited. A special case here is the wild pig, as this wild animal survives remarkably well in the plantation areas by eating the fallen palm fruits as their main intake. This is the main reason that the Terab group still has an abundant supply of wild pig.

Similar to other groups and as it is commonly practiced by the Orang Rimba in general, the Terab group hunts wild pigs using the locally made shotgun called *kecepek*. The *kecepe*k happens to be the most common tool to hunt the wild pig because it is the easiest and fastest to kill the animals. Moreover, specifically for the Terab group, the *kecepek* is the most important hunting tool since their mobility is around the plantation area with limited exploration in the forested areas. In addition, sometimes the children hunt birds using a *ketapel* or slingshot, and rats using a simple trap that they buy in the market. While for frogs, the children catch them using their bare hands.

The Terab group also sell off wild game, such as deer, which has a high commercial value, and they keep other game animals that do not have such a high value for their own consumption. This means that in terms of self-sufficiency, people prefer to eat whatever they find in their vicinity, while animals with a high commercial value can be sold in order to obtain cash. For example, the price for a small deer (without head, legs, and innards) was around IDR 500,000. They usually sell the wild game to the employees of the plantation company or the nearest neighbor in the transmigration village. In some cases, they also got a pre-order from the plantation staff to find some specific wild game, mostly deer or mousedeer for consumption.

Table 23. Types of animal protein of all meals consumed by the two households, Terab (n = 403)

Types of animal protein	Frequency	Percentage
Fish	46	11.4
Wild pig	56	13.9
Freshwater turtle	18	4.5
Hedgehog	33	8.2
Snake	44	10.9
Combination of above	1	0.2
Deer	0	0.0
Bird	16	4.0
Frog	26	6.5
Lizard	67	16.6
Squirrel	45	11.2
Rat	21	5.2
Primate	24	6.0
Unknown	6	1.5
Total	**403**	**100.0**

The Terab group considers some animals as sacred or *bedewo*, to borrow the local term. *Bedewo* is not about forbidding people from eating specific animals per se, but rather relates to the time when consumption of particular sacred animals is allowed[61]. For example, adult men and the elderly can eat certain kinds of animals that are restricted for children, unmarried girls, pregnant women, and breastfeeding mothers. The Terab group believes that eating taboo animals leads to serious health consequences, including:

- Children suffer from stunted growth or stay small and thin;
- Unmarried girls can fall sick all the time and can even die from illnesses;
- Pregnant women can give birth to babies with disabilities or the babies can die soon after they are born; and
- Children of breastfeeding mothers can suffer from continuous sickness, suffer from stunted growth, and may even die at a very young age.

The Terab group fulfills its needs for animal protein mainly by eating wild animals that they get by hunting and through sharing or exchange, and to a smaller extent by fishing and buying. Hunting and sharing are still important social values for the group. Typically, the Terab group hunts on an individual basis as well as in small groups. The proceeds from communal hunting trips are shared collectively. However, catches by single households are also shared with others, including members of other groups, depending on the quantity.

Table 24. Origin of animal protein of meals consumed by the two households, Terab (n = 403)

Origin	Frequency	Percentage
Hunting	231	57.3
Fishing	28	6.9
Given	129	32.0
Buying	12	3.0
Others	1	0.2
Unknown	2	0.5
Total	**403**	**100.0**

4.3 Conclusion

The daily diet of the Terab group, just like that of other groups of Orang Rimba, contains much more carbohydrate and animal protein than vegetables and fruits. Less than 10% of the consumed meals contain vegetables and fruits. Rice and cassava are the two most important sources of carbohydrate, followed by taro and other wild and starchy food. The sources of animal protein vary, with the majority coming from lizard, wild pig, squirrel, fish, and snake. Having said that, the combination of hunting and buying is the common source of food intake for the group.

I have argued elsewhere (Wardani 2007, 2011) that the Orang Rimba have experienced adverse effects from the growing influence of the interaction with other ethnic groups

[61] See Sandbukt (1984) for further reading on the Orang Rimba's conception of reality.

on their food habits, one of which is reflected in the increasing importance of foodstuffs obtained from shops or the market. Nonetheless, the household records show that the amount of food obtained through buying is limited to the carbohydrates, which they cannot produce themselves. Even those among the Terab group who live in relatively remote areas and practice traditional ways of living such as hunting and gathering for their food supply, cannot separate themselves from the money system and purchase food products they believe are important for their household. However, they also still rely on products obtained from the environment by hunting, fishing and collecting, which continues to be the main source of animal protein. In times of (income) crisis, the Terab group relies on relatives, on neighbors or on fellow Orang Rimba of other groups.

Based on my observations, during *remayo* (and *melangun*) periods, the Terab group members eat more carbohydrates than protein, which undermines their health. In this season, households face scanty supplies of all foodstuffs, ranging from the products they gather from forests, the animals they hunt, and the rice they buy from shops or the village markets. Heavy reliance on nature for sustenance, by hunting wild life, gathering forest produces, and undertaking modern labor in the plantations, means the Terab group are at the mercy of nature's forces in general, and seasonal variations in particular. This underlies the group's high vulnerability to food insecurity, which became painfully evident when 14 members of the Terab group lost their lives in 2015.

Vulnerability to food insecurity (food shortage) is attributable, among other factors, to the fact that the Terab group lives outside the national park and, because of that, it faces problems in their efforts to fulfill their needs for food and drinking water, which is often polluted by the use of chemicals in plantations. These factors contribute to the impact for the Terab group and their exposure to malnutrition, hunger, and various diseases. In addition, such conditions resulted from their move into sedentary livelihood as practiced by the mainstream population, without ample knowledge on good cultivation methods or sufficient information on engaging in trade on fair terms with other communities. In any case, they are still not entirely accepted as equal members of the communities in which they live, which has oftentimes generated tensions between them and mainstream society. Additionally, income-generating activities such as growing cash crops, picking oil palm fruits in companies' territory, and selling labor, are not enough to offset the loss they suffer by being confined in designated zones rather than leading a life of gathering forest products from vast expanses of forests, which are no longer available to them. In any case, efforts to reduce vulnerability made by external forces seem to be aimed at uprooting the Terab group from their cherished traditions they have long held, and a livelihood they have known and practiced for ages.

An Orang Rimba man in Terab area is going out to buy some groceries, 2014

V The Air Hitam Group: Living Inside the National Park

The Air Hitam group is located in the Bukit Suban area that has been one of my fieldwork sites since the very start of my ethnographic research among the Orang Rimba in 2007. It is located in the southern part of the Bukit Duabelas National Park and is administratively located in two regencies, namely *Kabupaten* Sarolangun and *Kabupaten* Batanghari. The Bukit Suban area is the third fieldwork location for my PhD research. It represents those Orang Rimba living inside the protected forest of the Bukit Duabelas National Park.

My first visit to Bukit Suban was in 2007. At that time, it was still rare to encounter the Orang Rimba from this group, who commuted from the forest areas to the surrounding villages of the Bukit Suban. If they were around, they were commuting on foot, bringing non-timber forest products like rattan for sale or carrying the daily groceries bought in the village back to their settlement. However, by mid-2012, when I carried out my PhD fieldwork, things had changed. Before approaching the border zone of the national park, I saw many of the Orang Rimba in the transmigration village of Satuan Pemukiman I (S.P.I.), precisely in the Bukit Suban center, doing their daily business, such as selling their rubber and NTFPs or shopping for groceries while using motorbikes.

Most people would perhaps not recognize the current appearance of some of the young Orang Rimba. They use the new types of motorbikes, they have updated cellphones, and they wear fashionable clothes. When they ride a motorcycle it is always the latest model, and they wear gloves and a trendy helmet. Their cellphones are filled with apps, including music apps with famous Indonesian songs. All of this is seen as 'normal' for Indonesian teenagers who live in the modern world. But for young Orang Rimba from the forest it is extraordinary. Those trendy young people are the young generation of the Orang Rimba from the Air Hitam area. At the same time, despite their trendy appearances, they are also still proud of their identity as Orang Rimba by showing 'their differences' from others. This now typical situation is a result of increasing interaction between the Orang Rimba in this area and other ethnic groups like the Malay people or the Javanese transmigrants.
This chapter discusses the current condition of the Air Hitam group who still continue to live inside the forest. The structure of this chapter is similar to that of the previous two chapters. The first part presents an ethnographic description of the group, especially the landscape and the settlement, the composition of the group, and its modes of livelihood. The second part will focus on the food production and consumption based on the results of the daily intake.

5.1 Ethnographic background to the Air Hitam Group

The Orang Rimba living in the area of Bukit Suban form part of the Air Hitam group, which comprises various smaller groups, namely the Paku Aji, the Semapuy, the Keruh, the Punti Kayu, the Tengkuyungon, the Gemuruh, the Kedundung Muda, and the Air Behan. The main analysis in this chapter focuses on the Punti Kayu and Kedundung Muda groups who are living in the watershed of some of the river branches of Air Hitam, the main river in this area.

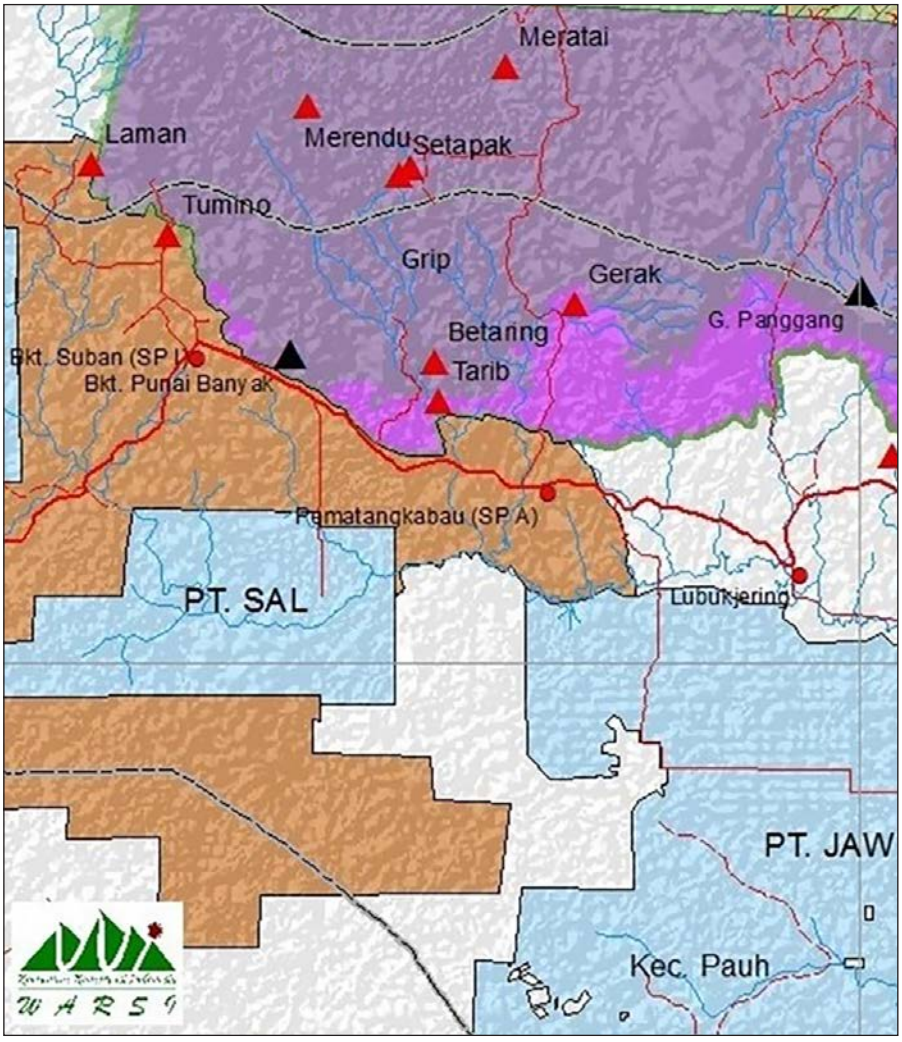

Figure 47. Map of location of the Air Hitam group in the southern part of Bukit Duabelas
Source: WARSI's map adapted by author, 2012-2014. Note: the red triangles are the resettlement areas of the Orang Rimba.

Figure 48. An Orang Rimba man of the Air Hitam group

For the purpose of simplification, in this chapter I will refer to these groups under the larger group name of the Air Hitam group. They live in a diverse landscape that allows them to diversify their livelihoods, which comprise rubber field management, hunting wild animals and collecting NTFPs. These locations also have a specific purpose for maintaining their cultural tradition of *melangun*. Since I have known most of the people from this group since 2007, almost all members of the group have been my informants for this research project. However, for the purpose of my food intake data, I picked only two households that are both originally from the Kedundung Muda group.

Landscape and settlement

The area in the southern part of the Bukit Duabelas National Park has been influenced by the transmigration projects and the oil palm plantations. PT. Sari Aditya Loka (PT. SAL) operates in this area, which is the branch of a giant plantation company in Indonesia called Astra Agro Lestari Tbk, which specializes in maintaining oil palm plantations. Inside the park, which still has some areas of relatively intact forest, there are two main rivers, the Air Hitam River and the Makekal River. These two rivers have smaller branches. In the watersheds of these branches many groups of Orang Rimba make their homes.
The homestead of the Air Hitam group is situated in the southern part of the park and

Figure 49. A *rumah ditano* in Air Hitam group

Figure 50. The resettlement project by the Office of Ministry of Social Affairs for the Air Hitam group

very close to S.P.I. village (Satuan Pemukiman I village). The distance between the village and the park's border is less than one kilometer. Moreover, right before entering the park, there is a field office of WARSI, which is used for Orang Rimba matters. It is a meeting point for customary purposes, temporary shelter, and an education center for the youth and a transit point for other parties who want to contact the Orang Rimba inside the park. This hub provides comfort and confidence to the Orang Rimba, making them more mobile[62] outside the forest and exposing them to other communities. In turn, this brings more economic opportunities in terms of commercial trading of the non-timber forest products. Such situations induce the Orang Rimba to become more active in their 'outside world' and they also get more involved in the cash economy. However, at the same time they also still refer to the Bukit Duabelas Forest as their home and main source of livelihood.

Inside the park, most of the Orang Rimba in this area live scattered in individual households along the banks of the rivers. Inside the forest, the Orang Rimba have three kinds of housing: *sesudungon*, *rumah ditano* and *rumah godong* (for details see Chapter II). Households in the group usually have these three types of houses for different reasons. *Sesudungon* are used for practical reasons of mobility and are particularly useful if the group is doing *melangun* or opening/managing a rubber field. *Rumah ditano* houses are bigger than *sesudongon* and have a more permanent structure with more functional rooms. Recently, the Orang Rimba in this group have opted to stay close to their rubber fields in the *rumah ditano* type of housing. Living in *rumah ditano* or *rumah godong* is a sign of a stable household.

Since 2010, the government through the Office of the Ministry of Social Affairs developed a new resettlement project for the Orang Rimba in this location. The houses are built in the vicinity of the national park. Even though the government has constructed the permanent houses, the Orang Rimba only use them for temporary purposes such as a transit shelter during the market days. This can be understood since the permanent houses are of a very different type and also their location is not according to the cultural preference of the Orang Rimba. Moreover, the houses are without proper facilities such as a water source. Some of the houses are sold to members of other ethnic groups, while there are also houses that are simply abandoned altogether.

The composition of the group

As mentioned, the Air Hitam group consists of smaller groups. There are two *tumenggung* in charge of the people living along the Air Hitam River. One *tumenggung* is in charge of six small groups, the other is in charge of two groups. The leader of the groups who live in six different watersheds in the southern part of the national park is *tumenggung* NR. Table 24 below depicts the composition of the population in the Air Hitam area.

[62] Since the building was developed, the Orang Rimba in this group did not hesitate to come out of the forest for various activities such as selling their non-timber forest products, shopping for groceries, or conducting customary meetings in the building. Besides using the building as an education centre, WARSI also established the local radio station run by the Orang Rimba youths. For these reasons, the Orang Rimba are not "shy" any more and more open to interact with the other ethnic groups. In short, the Orang Rimba in this group are more mobile ever since the establishment of the building.

Table 25. Number and size of households of the Air Hitam Group under *tumenggung* NR, 2014

No	Location of river branch	Number of households	Number of people
1	Keruh	20	89
2	Punti Kayu	28	134
3	Tengkuyungon	7	24
4	Gemuruh	16	75
5	Kedundung Muda	13	70
6	Air Behan	21	91
	Total	**105**	**483**

The total number of people living in the southern part of the park was 576 based on calculations by BPS and WARSI in 2010. This population was spread along the main Air Hitam River. The two groups are the Paku Aji Group and the Semapuy Group, and there are 19 households in these groups with a total of 93 people. These two groups mainly live in the plantation areas belonging to PT. SAL. Meanwhile, the other groups under *Tumenggung* NR's leadership are those who live inside the park. They comprise of 105 households and a total of 483 people.

Modes of livelihood

Nature guides the Orang Rimba in terms of a specific timeline for undertaking activities such as hunting, gathering, and farming. One example is the importance of the river. Rivers have influenced how the Orang Rimba arrange their farms (*ladang*), groups, houses, and they also determine the borders between them and the Orang Terang.

According to Japarudin (2014), the river is the second most important thing for the Orang Rimba after the forest (Japarudin 2014: 26). According to the Orang Rimba, the river is important because it is one of the life sources of the Orang Rimba. It provides a source of food in terms of fish and other freshwater protein for them. The Orang Rimba also depend on the river for many other needs such as drinking water and water for cooking, washing, bathing, and watering their gardens. For their daily needs, the Orang Rimba are not familiar with wells or other types of water technology. Therefore, the Orang Rimba's settlement is always close to the river, whether it is small or big. Accordingly, the group of Orang Rimba is attached to the name of the river in their vicinity, such as Makekal, Air Hitam, Kejasung, Terab, and others.

Rubber planting and tapping is among the main livelihoods of the Orang Rimba of Air Hitam. According to my informant, rubber was introduced to the Orang Rimba by the Malay people in the early 1980s. Cultivating rubber has now become a main source of livelihood for the Orang Rimba. The Orang Rimba living in the southern part of the national park create rubber fields by opening up the forest and slashing and burning the trees and other types of vegetation. However, due to the shortage of labor and tools, the Orang Rimba are only able to open a forest field once every two to three years and, on average, they can only manage between 0.5 and five hectares of land for rubber growing. The more family members they have, the larger the field. Approximately 1,000 rubber seedlings are required for a rubber plantation of one hectare. Over time, the Orang Rimba

have recognized that having rubber fields is more beneficial than only depending on the hunting and gathering activities for them in terms of income generation. This is because they are able to earn cash income by selling the rubber latex. A hectare of rubber trees can yield, on average, IDR one million or $US 75.10 per month for the Orang Rimba. Growing rubber is a long process. At least, a farmer needs to have a substantial amount of land. He also needs good quality seedlings and above all he needs labor to manage the rubber fields. Rubber trees need hot and moist weather. The Orang Rimba open the land very slowly. They use simple tools such as machetes and axes to cut the trees and slash the rest of the vegetation. After some time, when the weather has been dry and hot enough, they burn the withering vegetation. Once the land is cleared, they will wait until the land is ready to be planted. They usually buy the rubber seedlings in the nearby villages or sometimes they have a middleman contact to provide them with the seedlings. After finishing the planting of the seedlings, the Orang Rimba have to wait at least seven years to start the tapping of the latex or when the tree reaches a circumference of 45 cm at 100 cm height from the ground. As mentioned in the previous paragraph, I made an average estimation of the rubber production in the household level of the Orang Rimba, which is around $US 75.10 per month depending on the various enabling factors that influenced the production such as number of family members (laborers), the available land, the seeds, and the price of the latex (demand side factor).

In addition to rubber, the other sources of livelihood that the Orang Rimba of Air Hitam have to supplement their household incomes include gathering forest products such as rattan (*manau*), *jernang,* and honey. The process of searching for rattan, referred to as *memanau* (rattan collection), is carried out throughout year, which is in contrast with the collection of honey. As far as *jernang* or 'dragon blood' gathering is concerned, this work is done in groups due to the difficulties of collecting the rattan fruits.
For the Orang Rimba in this area, *memanau* is done once a month to complement their source of income. The duration of a trip to collect *manau* is about two weeks, with on average one to two hours of work per day. During *memanau*, the Orang Rimba will stay in a small group and build a simple *sesudungon*. During these rattan collection expeditions, the men also hunt nearby the camp, while the women usually stay in the camp to prepare the food for the family. Sometimes they also do fishing and preparing the rattan to be transported for sale. In between activities they rest and chat. The result of two weeks work is about 160 pieces of *manau* with a length of two to three meters. The Orang Rimba earn IDR 500,000 or $US 37.55 for 160 pieces.
Another important source of livelihood is hunting. Hunting wildlife provides a vital source of animal protein for the Orang Rimba. Hunting, which can be done by an individual or a group, involves men with a minimum age of 12 and it is done, on average, twice a week. There is still a wide range of animals inside the forest, including wild pigs, deer, and mouse deer. Wild pigs are the most commonly hunted animals and they are the Orang Rimba's favorite catch in this area. In a month, they usually catch a few animals, which allows them to consume animal protein almost every day, even though sometimes the hunt fails. The supply of animal protein from hunting is plentiful, either from their own efforts or from what is received from fellow Orang Rimba. When there is a surplus, especially in the rainy season, the Orang Rimba earn money by selling their catch. The most commonly sold meat is mouse

Figure 51. Transporting rubber latex after the harvest by the Orang Rimba youth in Air Hitam, 2013

deer, which fetches a price of about IDR 450,000 or $US 33.80 per small animal. Meanwhile, wild pigs are sold to a Batak middleman in S.P.I. for IDR 4,500/kg or $US 0.34/kg.

Relations with the outsiders

According to the Orang Rimba's world view, Jambi society has two levels: the Orang Rimba and the 'other world' or the world of the Orang Terang, which includes the incoming transmigrants (mostly of Javanese and Sundanese descent) and the Orang Dusun, a reference to the Orang Melayu. The interaction between the Orang Rimba and these other ethnic groups has intensified over time, especially over the last few decades, with the arrival of transmigrants in Jambi.

In order to maintain their internal strategies for facing various changes, the group has developed a policy of mutual assistance. Such an approach is very common within the Air Hitam group, especially in *remayo* season. The Air Hitam group usually does not borrow money or products from people outside their own community. This is due to previous experiences that resulted in them being manipulated by people from outside. There are stories of Orang Rimba from other groups borrowing money from outsiders, using their land as security. When they failed to repay the debt, the Orang Rimba lost the land, including land inside the national park. Some of the things the Orang Rimba borrow from other members of their group include sugar, coffee, or rice. Limited barter trade often supplements the reciprocal exchange. For example, people exchange petrol for sugar. The Orang Rimba use such a strategy to meet their daily needs. It is evident that whenever the group faces food shortages, they often call on the assistance of close family members (parents, parents-in-law and cousins). In the event that relatives cannot help, they will approach their closest neighbors.

In terms of external assistance, the government has implemented several resettlement and livestock programs in the Air Hitam region. However, these programs have generally failed as they do not fit with the Orang Rimba's livelihood and culture. As was mentioned above, the houses from resettlement programs either ended up abandoned or they were sold to other ethnic groups. 61 houses were built for the same number of Orang Rimba households in the Bukit Suban area (in the Punti Kayu 1 area) by the time I was doing my fieldwork in 2013. Each household received a house of simple wooden board, two bedrooms, one living room and a simple kitchen. It had a tin roof and a cement floor. In addition to that, the Social Office of Jambi provided a monthly allowance for eight months to the 61 households. The office also provided the agricultural seeds to the Orang Rimba and assigned the head of village and a professional agriculture trainer to assist the Orang Rimba in doing basic farming for one year. However, the resettlement project did not turn out as planned by the government because the Orang Rimba consider that having a permanent house and doing farming are against their traditional way of life.

Sometimes the Orang Rimba sold their resettlement house to transmigrants. The increasing number of transmigrants in/near the national park has compounded the problems that the Orang Rimba face caused by deforestation. The houses entitle owners to land ownership, which poses the danger that owners may one day decide to open up oil palm or rubber plantations in the national park, which will further reduce the Orang Rimba's habitat.

5.2 Food production and consumption

The Orang Rimba who are still living inside the forest have specific ways of preserving food. They have special knowledge about edible flora and fauna, which is closely related to their concepts of time, space, seasons, and nature. In combination, these factors differentiate the cultural aspects of food they consume and the ways to obtain it.

The following discussion of the food consumed by the Air Hitam group is based on my fieldwork data with respect to the daily intake gleaned from two households in a six-month period between November 2013 and April 2014. This period was chosen because it covers both the dry and wet seasons. The two households were chosen as representative for the daily intake data collection of the Orang Rimba living along the Kedudung Muda tributary. They were the households of *Mangku* BS and PB. Both households depend on rubber plantations and other traded NTFPs.

At this location, I hired young people to act as my field assistants to make records of the daily food intake and as my porters, since the compound was inside the forest and only accessible on foot. The field assistants helped me with routine tasks such as cooking, looking for firewood, and drawing water from the river. They also accompanied me while trekking in the durian forest, with interviewing people, and to collect data. One also acted as my driver when I travelled in the area on motorbike. In total I had three field assistants in Air Hitam, however, there was one who played the role as my main assistant and was tasked with recording daily food intake, namely BD. He is BS's son and later on he became a son-in-law of PB. These two informants and heads of households are classified as *rerayo* and were knowledgeable about Orang Rimba customs. While BS has an important political position as a *mangku* or a person who is in charge of custom-related issues, PB holds no such political position within the group. As a *mangku*, one of BS's roles is to handle political related matters for the Orang Rimba, both inside among their group and outside with the other groups or other communities. Any policies from the official authorities from the government agencies that are to be communicated to the Orang Rimba are discussed with the *tumenggung* as well as with the *mangku*. In return, any policies or decisions regarding the political stands from the Orang Rimba to the government agencies are also communicated through the *mangku*. Meanwhile, PB has no political position in the group. I consider these two households as representative for those having a political position with a high exposure to the Orang Terang as well as for those whose exposure is limited to the group itself.

Overall food intake and meal composition

The pattern of eating meals discernible from the data collected on the two households is depicted below (Table 25). Overall, it can be said that the two households had adequate food consumption based on the frequency of having regular breakfasts, lunches, and dinners. However, the data show that compared to HH1, HH2 showed lower frequency of eating breakfast and lunch, but it had a higher frequency of dinners.

Table 26. Types and numbers of (potential) meals consumed per household, Air Hitam

Potential meals consumed	Actual meals consumed				
	Frequency			Percentage	
	HH 1	HH 2	Total	HH 1	HH 2
Breakfast (n = 180 for HH1 and n = 60 for HH2)	180	158	338	100.0	87.8
Lunch (n = 180 for HH1 and n = 60 for HH2)	169	160	329	93.9	88.9
Dinner (n = 180 for HH1 and n = 60 for HH2)	176	177	353	97.8	98.3
Total (n = 540 for HH1 and n = 180 for HH2)	525	495	1,020	97.2	91.7

Based on the data collection of the presence of different food groups in all meals, in both households carbohydrate was the most consistently consumed food group. It was present in 96% of the meals. The second most important food group was animal protein, which was present in 70% of the meals. In contrast, the consumption of vegetables was quite low; it was part of less than 5% of all meals consumed by both households. The Air Hitam groups acquired the vegetables they consume by gathering or collecting them from forests as well as by cultivating them in their fields (*ladang*). The most common vegetables consumed were cassava leaves, string beans, and cucumber, while the consumption of fruit follows the fruit season and its availability.

Table 27. Presence of different food groups in all meals consumed per household, Air Hitam (n=1,020)

Type of food	Frequency			Percentage		
	HH 1 (n = 525)	HH 2 (n = 495)	Total	HH 1	HH 2	Average
Carbohydrate	501	475	976	95.4	96.0	95.7
Animal protein	366	348	714	69.7	70.3	70
Vegetable	20	8	28	3.8	1.6	2.7

Composition and origin of carbohydrates

Carbohydrate plays an important role in the food consumption of the Orang Rimba in general, in fact it is the main component of their intake. In terms of types of carbohydrate consumed by this group, it can be classified as 'adopted' carbohydrate (rice) and 'foraged' carbohydrate. The foraged carbohydrate is collected using traditional knowledge and include *hubi kayu* (cassava), *keladi* (taro), as well as wild tuber and other starchy food (such as *benor*/yam, *gadung*/yam and *tebu*/sugar cane). Over the last few years however, rice has become the major staple, following the example of their village-based neighbors. This is attested to by the intake data collected during the fieldwork as well as my observations.

Table 28. Types of carbohydrate of all meals consumed by the two households, Air Hitam (n = 976)		
Type of carbohydrate	**Frequency**	**Percentage**
Rice	567	58.1
Cassava	313	32.1
Wild tuber and other starchy food	96	9.8
Total	**976**	**100.0**

The average number of meals containing rice of the households in the Air Hitam group was over 50%. It has become the main carbohydrate. This is despite the fact that the households still live inside the Bukit Duabelas Forest. This means that geographical location does not have a significant impact on their dependency on the market for rice. Rice has become the major staple for the Orang Rimba, regardless of where they live. Indeed, rice is slowly but surely replacing their traditional staples. The main reason the households opt for rice over their traditional staples is that they have become accustomed to eating rice, often since childhood. If they are forced to eat tubers due to a shortage of income, they often find that the non-rice carbohydrate does not give them a sense of having full stomachs. This is despite the fact that the group still recognizes the importance of tubers as a great source of energy for their menial activities such as hunting or tapping rubber.

One of the key informants said the reason they prefer rice over tubers is that rice is easy to buy from markets, easier to cook, and can be stored for longer than a month. By contrast, storing tubers is not easy as they have to be eaten as soon as possible before they rot. Households that are dependent on tubers must allocate more labor for the daily cultivation and preparation of the crops.

Despite the clear shift towards rice, tubers remain important for the households. Tubers are supplemented with meat caught during hunting expeditions. According to my key informants, having meals with meat from wild game caught from the forests is more satisfying than eating just rice.

In terms of taste, my informants consider *benor* as the most delicious tuber, which they obtain by digging nearly a meter into the ground. Meanwhile, they rarely ate *gadung*, which is a relatively unfamiliar product to them. Preparing *gadung* is difficult as it requires sufficient knowledge to prepare the yam, otherwise it can be poisonous. To be eaten safely, *gadung* should be sliced slightly and stored inside a bag, after which it is immersed in the running water of the river for at least five days. After removing it from the water, *gadung* should be put in the sunshine for a few days. The Orang Rimba classify *gadung* as a famine or emergency kind of food, which means that they only eat it during *remayo* season or in times of hardship.

Growing cassava, by contrast, is an easy task for the Orang Rimba. They only need to plant a branch of the cassava tree in the ground and then wait for it to grow, without any other care or treatment. They only have to protect the plants against wild animals (especially

wild pigs and primates) during the early stages (Sandbukt 1988). There is also no need to worry about pests since the forest is usually free from pests that harm cultivated crops. According to my key informants, the taste of cassava from their own garden is much better and sweeter than that of cassava from outside of the forest.
Cassava growing is usually done in September when the rainy season begins and the rainfall is just enough, making it a good time for planting. Consumption of cassava occurs between January and June when the dry season (*kemarau*) begins. Cassava in Air Hitam in particular and inside the Bukit Duabelas Forest in general requires three to four months to mature.

The sources of carbohydrates for the Air Hitam group were varied: buying, collecting, cultivating, and giving. Table 28 below reflects the origin of carbohydrate consumed by the two households.

Table 29. Origin of carbohydrate of meals consumed by the two households, Air Hitam (n = 976)

Origin	Frequency	Percentage
Buying	577	59.1
Collecting from the forest	33	3.4
Harvesting from the garden	293	30.0
Given	70	7.2
Unknown	3	0.3
Total	**976**	**100.0**

Based on my field observations, it is clear that the collection of certain foodstuffs, especially tubers, is done in the morning and in the evening. Usually, the homestead compound is located near the source of foodstuffs, which is where the tuber gardens are often located. Cooking is the responsibility of women, who do it in the morning and evening, before and after the men are engaged in activities in rubber fields or other activities in the forest, not far from homestead compounds. Lunch often consists of the leftovers from breakfast and the two households rarely cook during lunchtime.

Composition and origin of animal protein

In terms of animal protein consumption, my findings indicate that fish was most important, followed by wild pig, freshwater turtle, and snake, among others (Table 29). It is important to note that the high consumption of fish in this area is based on the fact that the households in this group are very fond of fish, which they acquire by either fishing from the river or buying it from the market in S.P.I.

Table 30. Types of animal protein of all meals consumed by the two households, Air Hitam (n = 714)

Type of animal protein	Frequency	Percentage
Fish	368	51.5
Wild pig	102	14.3
Freshwater turtle	101	14.1
Hedgehog	34	4.8
Snake	47	6.6
Combination of above	12	1.7
Deer	30	4.2
Mouse deer	12	1.7
Bird	8	1.1
Total	**714**	**100.0**

I was surprised by the high consumption of fish, because initially I expected that meat of forest mammals would be the most important animal protein eaten since the Air Hitam group still live inside the forest. Based on the data collected from the two households, it is apparent that animal protein obtained from hunting mammals on a monthly basis showed a lower frequency than animal protein from the freshwater resources. The 'peak season' for mammal hunting is November and December, during the rainy season. At the beginning of the transition from the rainy season to the dry season, which starts in January, consumption of mammal protein by the households declined.

Table 31. Origin of animal protein of meals consumed by the two households, Air Hitam (n = 714)

Origin	Frequency	Percentage
Hunting	206	28.9
Fishing	266	37.3
Given	219	30.7
Buying	12	1.7
Others	11	1.5
Total	**714**	**100.0**

Even though hunting of mammals is a year-round activity for the Orang Rimba in general, it often brings poor outcomes during the dry season. To that end, to supplement this shortfall, the households often intensify fishing activities in river beds during the dry season. That is why the families often switch sources of food in accordance with the season. During the dry season, when mammal game is relatively scarce, they consume more animals from the rivers, while during the wet season hunting for mammals in the forest picks up and becomes the main source of protein. Thus, it can be said that this group depends heavily on the river as their main source of livelihood, since their diet includes fish in both the dry and wet seasons.

Coping strategies

In general, the Air Hitam group uses three types of strategies to cope with food insecurity, namely household strategies, social strategies, and relying on external assistance (from the government and NGOs).

At the household level, when confronted with food shortages due to failed hunting expeditions, which often occur during the dry season, this group adopts the strategy of other Orang Rimba groups and reduces the quantity of food consumed, and they change the type of food. They start eating more soup for instance. Another coping strategy is to preserve animal proteins and other products obtained from hunting/gathering expeditions in order to deal with future shortages. Animal protein is smoked using *salaue*,[63] a traditional technique that makes it possible to store food for several days. It involves preserving the meat by cooking it slowly over a fire for many days, and inducing it to rot.

The social strategy for dealing with food shortages is sharing proceeds from hunting trips, either individually or within small groups. Hunting proceeds from individual or communal hunting expeditions are shared collectively, depending on the amount caught. This strategy of obtaining food for other members in times of shortage enables the group to overcome food crisis situations.

Coping strategies have included diversifying sources of food by growing cash crops such as rubber, providing menial labor to in-migrant communities, engaging in trade, food rationing, and sharing surplus food with friends. Government assistance has been ineffective as it focuses on acculturation through resettlement and lifestyle changes. The lives of the Orang Rimba in Bukit Suban are at a crossroads, as they adopt the lifestyle of transmigrants out of necessity, while continuing to stick to whatever vestiges of values, norms, and habits they can hang on to, in order to retain their status as a separate ethnic group, distinct from the majority.

5.3 Conclusion

Overall, it can be said that with the exception of rice, the Air Hitam group mostly depends on nature for its food. The wild animals, fruits, honey, and other types of food they gather from the rivers, the land, and the forests, constitute a surplus of food, which automatically secures their food needs, albeit temporarily. During the transition period, which follows the food surplus period, they have to resort to their rubber fields to supplement their income that allows them to buy food from the local markets.

The finding shows that the Air Hitam group has adequate food intake with high consumption of carbohydrate and moderate animal protein. Rice has become the major carbohydrate intake, followed by cassava, and lesser consumption of wild tuber and other starchy food. The Air Hitam group consumes a high variety of wild animals as their source of animal protein compared to the other two groups. Fish is the major component of the protein intake, while meat from wild pigs and freshwater turtles are more or less of

[63] *Salaue* is one of the ways Orang Rimba preserve their foodstuffs, which includes smoking, cooking, and rotting.

equal importance after fish. Other varieties of wild animal protein consumed by the group include snake, hedgehog, deer, mouse deer, and bird.

Sharing is a crucial part of the food intake among the Air Hitam group, aside from fishing and hunting. This group combines rubber growing with a dependency on the forest. Apparently, rubber is a suitable crop for the Air Hitam group to combine with other forest-based activities. It gives them an autonomous means to earn cash that helps them generate relatively secure sources of food and cash.
Sustainability of livelihood is discernible from the degree to which a community has long-term access to sufficient quantities and quality of food. Being so heavily dependent on the forest for their daily food provisioning, both continued access to and effective protection of the Bukit Duabelas National Park are therefore essential for the Air Hitam group.

A WARSI staff teaches Orang Rimba kids to write, 2015

VI Conclusion: Adapting to New Conditions

It was in March 2013, in my second year of fieldwork, that I returned to Jambi once again. Due to bad weather, the plane landed late at the Sultan Thaha Airport after 45 minutes of circling above Jambi, waiting for the weather to clear. After landing I could not leave the airport as soon as I would have liked, but instead I had to make a stopover in a small *Rumah Makan Padang* restaurant at the airport, before heading to my boarding house in suburban Jambi City.

However, the waiting and overpriced foods were worth it. As I ate, I heard the conversations of the people who were seated at the tables around me. I heard some people talking in Javanese, others spoke in the Jambi Malay, and some were chatting in Minangkabau. This made it an entirely different day for me compared with what I had experienced during my previous fieldwork days in 2006-2007, when Malay Jambi dominated all communications in the places I visited.

Most of the visitors in the restaurant had modern gadgets, typical of modern Indonesian society, in their hands. Some of them were busy talking on the latest cellphones, and others were talking to each other. I recall that most of the conversations were about business. A woman in front of my table talked about her logging business to a man who wore what seemed to be an expensive watch. I heard their discussion not only because the restaurant was small but also because she spoke loudly, which is typical of Malay people in this area. She explained to the man that she had just bought a new big and strong bulldozer to clear the forest, which, she insisted, had the ability to do everything faster and cleaner if the man wanted to have an effective outcome for his new business. Based on what transpired, the man seemed to be an investor wanting to invest his money to establish a new plantation in Jambi. At another table, not far from where I sat, various people discussed how best to spend a windfall of money that a Javanese man had just inherited from his parents. He intended to spend the money on a plantation as well, and was looking for a partner who could establish a partnership with him to set up a new business. The rest of the customers were discussing ordinary issues of daily life, but it was clear from their appearance that most of them were visitors/newcomers from other provinces, looking for good fortune in Jambi.
The conversation that transpired at the small restaurant is now typical, and reflects the fact that Jambi is a booming province in Indonesia. This area has attracted a lot of

attention with respect to further development. The consequence is that Jambi has become very attractive to many outsiders who are interested in establishing both large- and small-scale oil palm and rubber enterprises. The trend is understandable given the good economic performance of Jambi in recent years.
Plantations and forestry operations made the largest contribution to economic growth in the agricultural sector of Jambi Province. Rubber and oil palm plantations dominated this sub-sector, posting growth of 7.9% in 2014. This number is higher than the national average, which was 5.11% in the same year. This is not to mention the labor absorption rate of 49.4% of the total labor force in the province.[64]

The high growth in the number of rubber and oil palm plantations in Jambi is expected to continue. Based on figures from Statistics Indonesia (BPS) in 2009, the total area of rubber fields in Jambi was about 650,623 hectares. This had increased with 17.8% over five years. Meanwhile, the number of rubber farmers in 2009 was 251,796 people. This increased by 1.2% to reach 254,813 people in 2014. At the same time, the total area of oil palm plantations increased by 20.2% from 493,737 hectares in 2009 to 593,433 hectares in 2014; while the number of oil palm farmers increased by 9% in the same period, from 172,133 people to 187,756 people (BPS 2015).

Most of the farmers are smallholders with a total land entitlement of less than 25 hectares. This is typical of the rubber and oil palm plantation areas throughout Indonesia (see Barlow and Muharminto 1982: 86 in Dove 1996). In the case of Jambi, based on my observations during the fieldwork, most of the farmers are transmigrants, with some participation from the Orang Melayu but hardly any from the 'native and customary societies', *masyarakat adat,* such as the Orang Rimba, the Talang Mamak, and the Batin Sembilan. It is then little wonder that Jambi Province has become "the promised land" for many investors, both large and small.

Returning to the conversation at the airport restaurant, as I listened to the logging business talk, my mind went back to the Terab group where I had lived for over five months in 2012. What was still fresh in my mind was the vast land that had been cleared by HTI companies and Malay farmers and transmigrants with their small-scale land clearings. They had cleared the forest and replaced it with *anak para* (rubber seedlings) in the area that used to be home to the Orang Rimba.

That reminded of the time when I had to walk on slippery, water-logged roads after days of heavy rain, which is the norm for the Terab group due to the deplorable infrastructure in the area, which is largely attributable to conversion processes for commercial plantations.

While on a visit to Pauh and trapped on a muddy road, the Orang Rimba told me a story about the land conversion in the area we had just passed by. They remembered witnessing the vast rainforest being converted into plantations in a very short time, without ever being told when the process would start. Later, they told me that the condition was

[64] A statement by an expert from Jambi Provincial Governor's staff (2015).

changing so fast, almost after everything had been lost including the most precious thing in their lives: the forest. I could detect some serious bitterness as they told me the story, and they were upset about having been left out of the logging activities. Today, the rainforest has made way for plantations, as far as the eye can see, and heavy forest clearing machines are ubiquitous. The sound of chainsaws and bulldozers is the new rhythm of daily life in Terab, while trucks full of oil palm fruits and heavily loaded with logs, travel back and forth many times a day.

I asked them the same question I had asked them repeatedly during my first fieldwork, as to whether they were happy with the change in their lives as a result of the arrival of modern things such as money, motorcycles, cellphones, and other modern tools. Their response was both curt and emphatic, and it was that if they could turn back time, they would not allow other parties to take away their forests at any cost. But they were powerless to do anything when big companies equipped with "sacred" letters from high authorities in Jakarta (*rajo godong*, in the local term of Orang Rimba) arrived to notify them that what they had considered their home was to be razed and replaced by plantations.

The business conversations in a small restaurant at the airport reflect the situation of many forest dwellers throughout Indonesia. I have to agree with Dove (1996), who suggests that forest degradation in many parts of Indonesia is not caused by the decisions of the forest dwellers themselves; rather it begins in places away from the forests, in cities like Banjarmasin, Samarinda, Pontianak, Jambi (in the case of the Orang Rimba), and especially in Jakarta, through government interventions and policies, which aim to promote rapid economic growth through investment at national and provincial levels. Not to mention the business interests in the form of oil palm and rubber plantations, as well as the mining industry, all of which are now a part of daily life in Jambi. Forest dwellers, such as the Orang Rimba, have limited capacity and opportunity to absorb and take advantage of the development process and they have no power to participate in decision-making processes.

This chapter reflects on the results of the previous three chapters. A comparative analysis is presented to draw the general pattern of the transformation process of the Orang Rimba represented by the three groups. The differences and similarities among the three groups are presented in the form of a descriptive analysis. While the backbone of the analysis focuses on the food security, this chapter intends to use the food security lens as an entry point to the larger transformation process that the Orang Rimba experience.
This final chapter is divided into three main parts. The first part presents the comparative findings on food production, food consumption and food security in the three groups against the backdrop of their demographic, environmental and livelihoods situations. The second part discusses the findings in light of the broader perspective of food and livelihood security among hunter-gatherers. The third part presents the general conclusions.

6.1 Comparison of the three groups

Landscapes and settlements

Access to land is an important factor that contributes to efforts toward achieving food security and in a larger context to achieve sustainable livelihoods (Lovenddahl et al. 2004). In general, as is common practice in Indonesia, customary societies (*masyarakat adat*) occupy their ancestral lands which they cultivate and use. However, such considerations are often in contravention with existing laws and government regulations. According to the government, an individual is considered to have right to land if he/she has permission to manage and use it, or a land title that proves ownership from the government. However, such provisions are not applicable to customary societies (Wijaya 2015).

In the case of the Orang Rimba, there are differences in the access to land between those who are living inside the national park and those who live outside the park. The Air Hitam group for instance has access to a large piece of land that goes as far as the untapped forests within the Bukit Duabelas National Park. In contrast, the Sako Tulang group is more settled in rubber plantations at the border of protected areas and the settlements of other ethnic groups. The Terab group is the most mobile group, and has been roaming around in a large area covered with oil palm plantations.

The differences in access to land also lead to a variation in the types of housing for the Orang Rimba in the three groups. As discussed in the previous chapters, the Sako Tulang group has a preference for living in *rumah ditano* that are close to their rubber fields. This also symbolizes more stable and permanent housing, situated in between the forested areas and the settlements of other ethnic groups. Since the Terab group lives more mobile than the other two groups, the *sesudongon* with a plastic roof is the common type of housing for them. This also reflects the practical reason for their mobility as they live in the oil palm plantations. The Air Hitam group lives in three types of Orang Rimba housing (*sesudungon*, *rumah ditano*, and *rumah godong*), with the addition of the permanent type of house provided by the government in the resettlement project. However, based on my observations, the most commonly used types of houses by the Air Hitam group are *sesundungon* and *rumah ditano*.

Demographic composition

Based on the data collected during the fieldwork and supplemented by the data from WARSI, the total population of the three groups studied is nearly 950 people, and consists of more than 200 households. This means that, overall as well as within each of the three groups, the average household size is four to five people. The number of children per household ranges from two to five. It is typical in an Orang Rimba household that once the members of the family get married, they start living separately from the nuclear family. Because of this, new households are relatively small.

Table 32. Number of people in the three groups studied, 2010 – 2014

No	Group	Number of households	Number of people	Average per household
1	Sako Tulang	26	124	4.7
2	Terab	75	339	4.5
3	Air Hitam	105	483	4.6
Total		**206**	**946**	**4.5**

As mentioned in Chapter I, particularly in Section 1.5 on the Research Methods, the concept of household by the Orang Rimba consists of a husband, the wife (or wives), and their children. Households with more than one wife are limited to those with relatively favorable financial conditions, such as those of the *tumenggung*. Occasionally, additional dependent family members such as a widowed grandparent or other close relatives with unfortunate conditions are part of the household as well. However, I only found one or two households in Terab and Air Hitam which included more than two generations, and none in Sako Tulang. In the case of Sako Tulang, several widows stayed alone with the children with no intention to stay with the extended family. They preferred to continue to manage their rubber plantation on their own, especially with the local middlemen among the group, which gave them easy access to sell their produce. This is the reason why they prefer to stay unmarried and refuse to move back with the parents after the passing of the husbands.

Sources of livelihood

The sources of livelihood of the three groups can be categorized into cash crop farming, subsistence farming, hunting, fishing and gathering, and providing labor to other people. The relevance of these activities for each group is summarized in Table 32.

Table 33. Sources of livelihood in the three groups

	Sako Tulang	Terab	Air Hitam
Cash-crop farming (rubber and oil palm)	✓	✓	✓
Subsistence farming (cassava)	✓	✓	✓
Acting as middlemen in cash crop trade	✓		
Hunting		✓	✓
Fishing	✓	✓	✓
Collecting seasonal fruits	✓	✓	✓
NTFP collection and trade (rattan, dragon blood, honey, resin)	✓	✓	✓
Labor on Orang Rimba rubber fields	✓		
Salaries from the plantation companies to certain people		✓	
Intermittent providing labor to the plantation companies		✓	

From the variation in livelihoods between the groups, it is clear that the Sako Tulang group depends more on cash crop farming system, particularly on rubber and oil palm related work, including farming, being laborers and middlemen. In Terab, people tend to rely on a combination of hunting and gathering and the plantation companies. The Air Hitam group limits their sources of livelihood to hunting and gathering of forest products, and to a lesser extent to rubber growing.

Interaction with the outside world

As mentioned in several parts of the previous chapters, the direct and indirect interventions of the government have played a major role in changing the Orang Rimba's modes of livelihood. Among the most important of these were the resettlement projects for the Orang Rimba in Air Hitam (2015), the proposed *desa adat* (customary village) in Terab (2015), and the opening of the road from S.P.A. to Sako Tulang (2014). According to the Orang Rimba, these programs were misplaced or at least difficult to follow, since the Orang Rimba's traditions forbid them to live under such conditions, like living in a permanent house or being a fulltime farmer. The advent of logging operations, in combination with the implementation of the transmigration projects from the 1980s onwards, brought various influences for the Orang Rimba, both as regards interethnic tensions and worsening deforestation. With regard to the government's policies on transmigration, the influx of migrants into the areas that the Orang Rimba used to call their ancestral home has substantially reduced their home territories. In addition, the arrival of these migrants has induced changes in the Orang Rimba's ways of life. While they have by and large been able to preserve some of the norms and taboos they inherited from their ancestors, the increased interaction with other ethnic groups, the induced accommodation and the assimilation that were necessary for living in a new environment, have made changes in livelihoods and lifestyles unavoidable. There are however variations in the interactions between each group and outside actors (Table 33). The Sako Tulang group interacts most intensively with neighboring ethnic groups, mostly in relation to cash crop farming activities such as selling produce, buying inputs, and other business transactions related to finance (borrowing and lending). In Terab, people tend to interact most intensively with the plantation companies since they are living in the plantations that officially belong to these companies. In Air Hitam, local government offices such as those of education, public health and social affairs play a significant role. In all three groups, WARSI has a significant influence by providing basic education and health services, and by assisting in negotiations with local governments related to the development process.

Table 34. Matrix of outside actors/influencers of the Orang Rimba

Sako Tulang	Terab	Air Hitam
Neighboring ethnic groups: the Malay and the transmigrants	Plantation companies: rubber and oil palm	NGO: WARSI
NGO: WARSI	NGO: WARSI	Neighboring ethnic groups: the Malay and the transmigrants
	Neighboring ethnic groups: the Malay and the transmigrants	Local governments: education office, public health office, and social affairs office.

6.2 Food security among the Orang Rimba: a comparative analysis

As mentioned in Chapter I, in order to shed light on the Orang Rimba's food security status, two complementary approaches are used. First, dietary patterns can be discerned based on the analysis of daily food records. Second, qualitative, ethnographic data provide insight in the four food security indicators: availability, accessibility, vulnerability and sustainability. This section provides a comparative analysis based on these two complementary approaches.

Dietary patterns

The Orang Rimba studied in this research are represented by six households drawn from three groups. The first comparative finding on dietary patterns in three groups gauge the types and numbers of potential meals consumed in the groups studied. The Sako Tulang and Air Hitam groups both consume more than 90% of all potential meals, while the Terab group more frequently skips meals. From Figure 52 it is evident that the most regularly consumed meals are breakfast for the Sako Tulang and dinner for the Terab and the Air Hitam groups.

Based on the food records, it is evident that the results from the Sako Tulang group differ from those of the households from the other two groups. For people in Sako Tulang, breakfast is the most important meal which is never skipped, while in Terab and Air Hitam, it is dinner that is (almost) never missed and has the highest frequency. From Figure 52 we can also learn that overall, dinner is the most important 'eating ritual' in all three groups, reflected by a frequency of more than 95% up to 100% meals consumed.

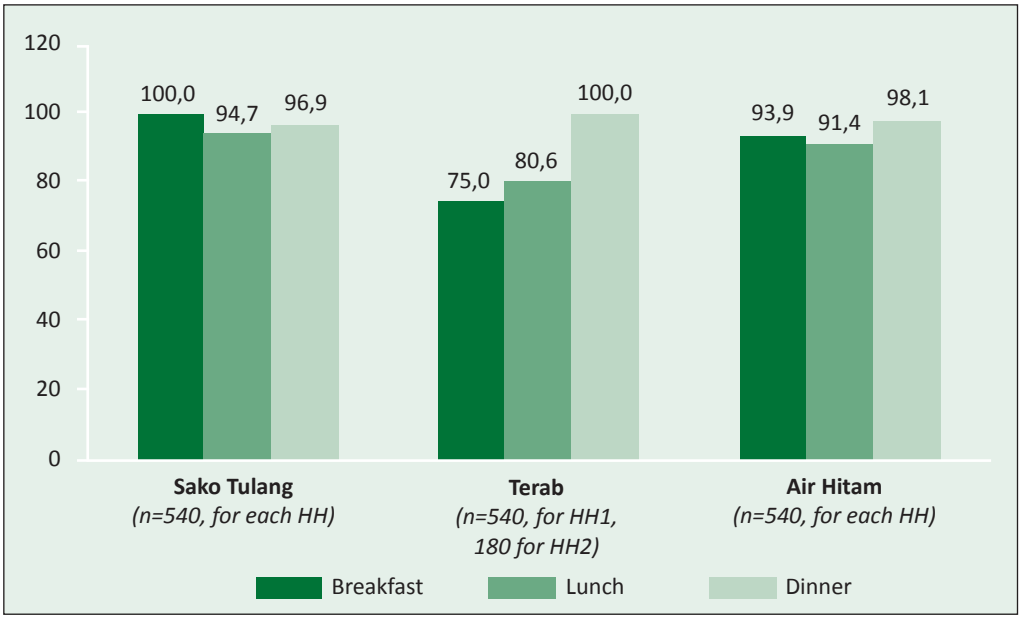

Figure 52. Types and numbers of (potential) meals consumed by the households

The composition of each meal during breakfast, lunch, and dinner can be found in Figures 53-55. It is clear that during all of these meals, carbohydrates and animal protein form the most important components, while the consumption of fruits and vegetables is very minimal for the three groups.

The comparison of the composition of the breakfasts in the three groups shows that carbohydrates and animal protein are the most important components. Carbohydrates contribute more than 90% of the intake for the Sako Tulang group and the Air Hitam group. The Terab group eat fewer carbs at breakfast compared to the other two groups, which consists of less than 80% of their intake. The animal protein is another important component for the three groups at breakfast that contributes less than 50% for the Terab group and more than 70% for the other two groups.

The same pattern continues for lunch. Both carbohydrates and animal protein are important elements that contribute more than 90% and more than 70% for the three groups.
The same applies for dinner. Carbohydrates contribute more than 90% for the dinner intake, in which almost 100% of the Terab group eat carbohydrates, while the three groups eat more than 60% animal protein for their dinner intake.

From the three figures, we can conclude that the diet of the Orang Rimba contains more carbohydrates and animal protein than fruits and vegetables. As mentioned in Chapter I, for this reason further analysis of the fruit and vegetable components was omitted.

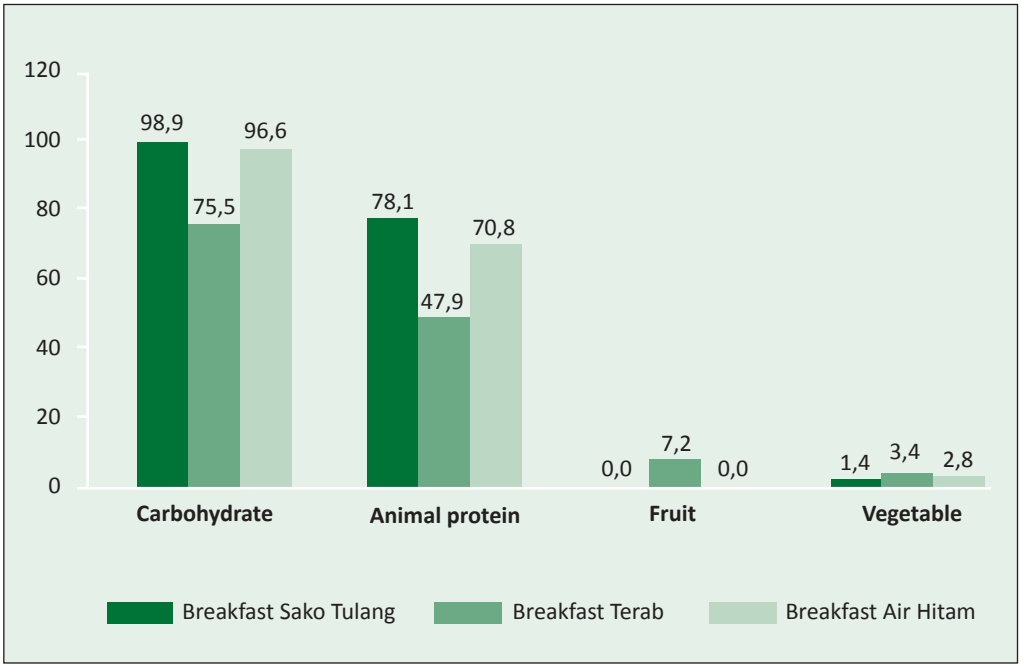

Figure 53. Comparison of composition of breakfast in three groups

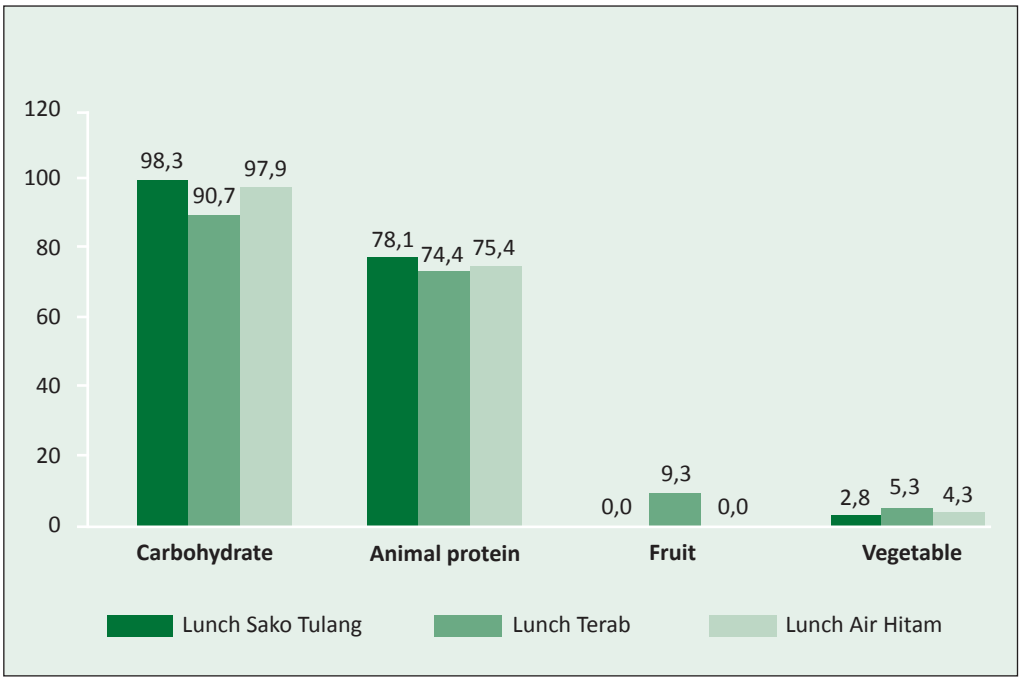

Figure 54. Comparison of composition of lunch in three groups

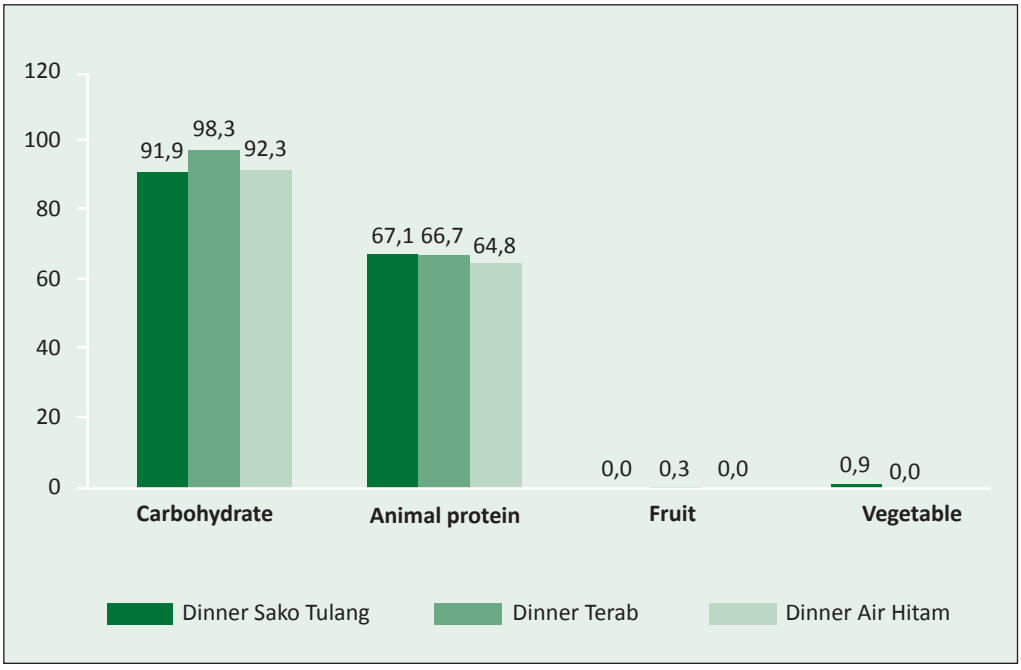

Figure 55. Comparison of composition of dinner in three groups

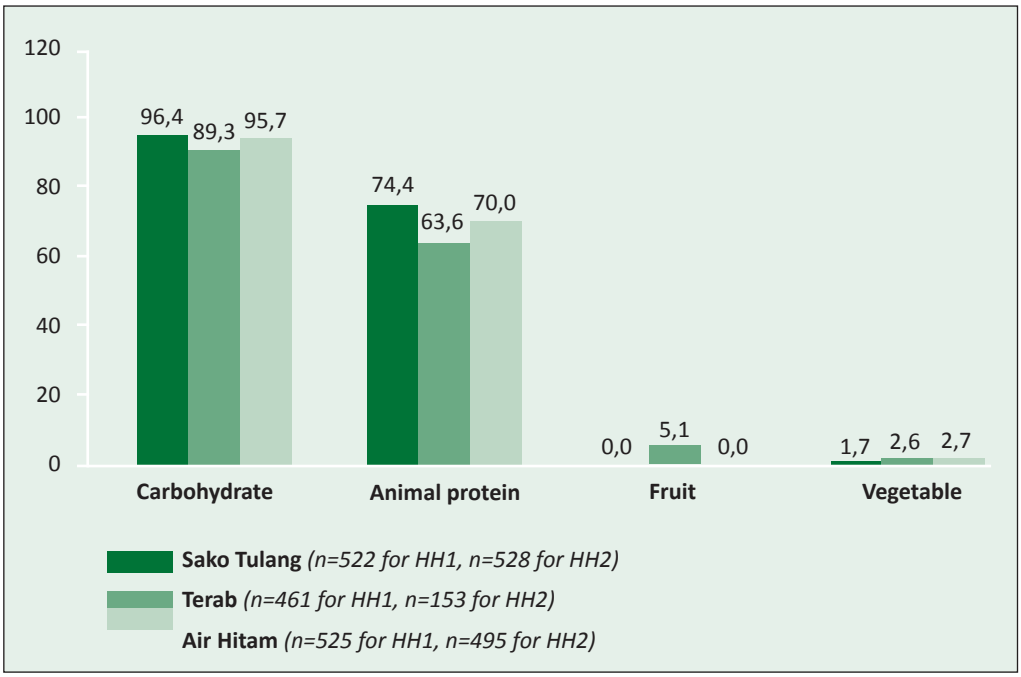

Figure 56. Presence of different food groups in all meals consumed by the households

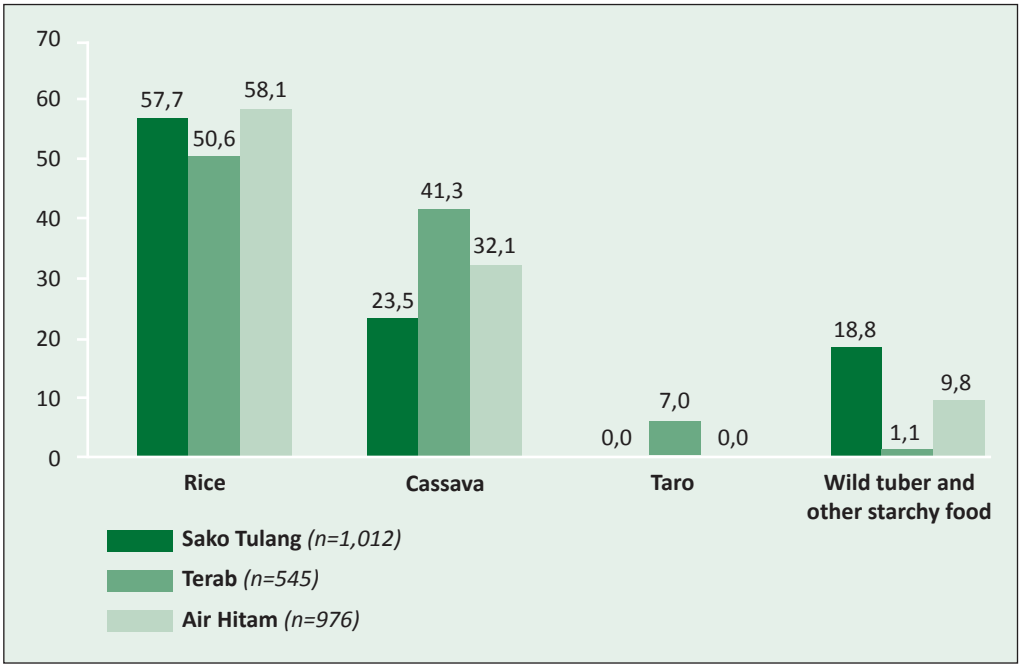

Figure 57. Types of carbohydrate of all meals with carbohydrates consumed by the households

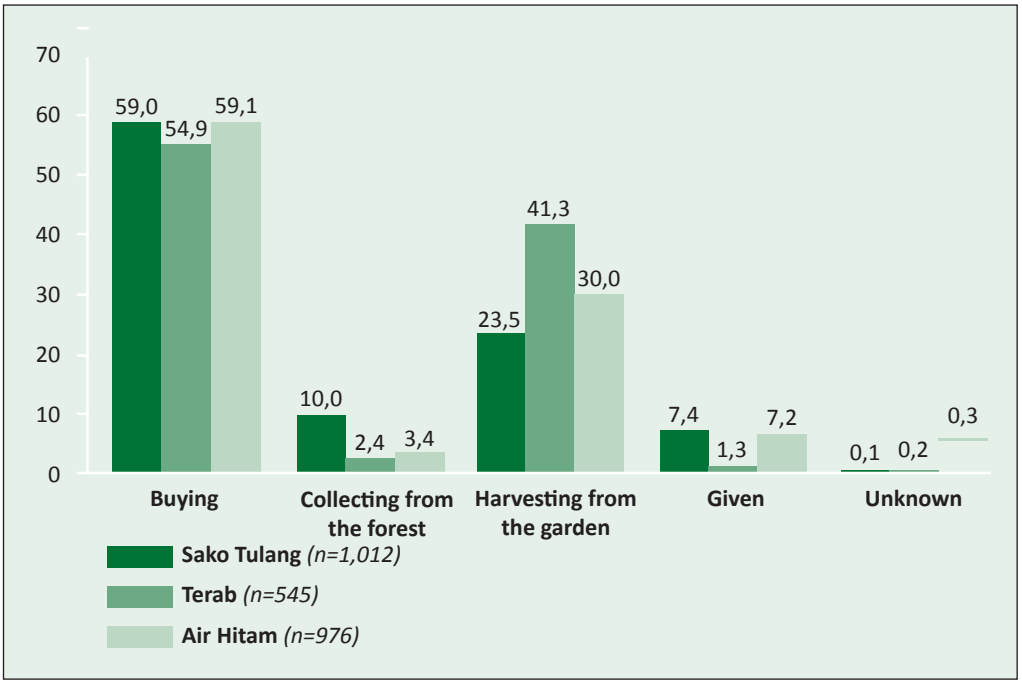

Figure 58. Origin of carbohydrates of all meals with carbohydrates consumed by the households

As Figure 57 shows, rice is the main type of carbohydrate consumed by the three groups, followed by cassava. Rice has become the number one choice for the Orang Rimba, and is eaten in more than half of all the meals in each location, while cassava is the second choice. Other types of carbohydrate consumed are taro and wild tubers.

From Figure 57, it is evident that the Terab group and the Air Hitam group place more or less equal importance on rice and cassava, while the Sako Tulang group eat less cassava compared to the other two groups. During field observations it was clear that the Sako Tulang group enjoyed both rice and less cassava during the months of September to December 2013, while in the months of June to August 2013 rice was consumed more frequently. This was because during September to December 2013, the SK group had less fruitful results from their rubber field so that they had to combine their staple (rice and small amount of cassava). But during June to August 2013, they were able to buy more rice due to better harvests from their rubber plantation. In addition, they were also more successful during hunting trips during that time (June to August 2013). In the Sako Tulang group, rice is consumed with other condiments, including salt and sugar.

Rice has become the dominant staple consumed by the Orang Rimba and, since they do not cultivate it themselves, it is acquired by buying from the market. Across the three groups, between 55-60% of the staple food is obtained by buying, while roughly one quarter of the staple food is harvested from their own gardens near the settlement, while

a small percentage of the staple food is obtained through a combination of collecting it from the forest and by receiving it from other Orang Rimba.

With regard to animal protein, the analysis shows that fish from the rivers and swamps is the most commonly consumed animal protein for the Sako Tulang and the Air Hitam groups, amounting to between over 50% and nearly 60% respectively, while it was only 11% in Terab. The high consumption of fish both in the dry as well as in the wet season indicates the importance of fish as provider of animal protein.

In the Terab group, on the other hand, lizards alone contribute relatively much (over 16%) to protein intake, while a variety of mammals (dominated by wild pigs) account for less than 20% of the animal protein in the meals. The importance of wild pig in Terab can be explained by the fact that nowadays the Terab group lives in oil palm plantations, where wild pigs do rather well because of the availability of fallen oil palm fruits.
A limited number of meals contained meat from a combination of more than one category and comprises the combination of fish and water turtle, fish and snake, fish and frog, and fish and wild pig, as well as other mammals such as long nose deer and antelope.

Table 35. Types of animal protein of all meals containing meat consumed in the three groups

Type of animal protein	Sako Tulang (n= 781)	Terab (n= 403)	Air Hitam (n= 714)
Fish	58.8	11.4	51.5
Wild pig	13.6	13.9	14.3
Freshwater turtle	7.3	4.5	14.1
Hedgehog	5.0	8.2	4.8
Snake	4.7	10.9	6.6
Deer	3.8	0.0	4.2
Mouse deer	0.8	0.0	1.7
Bird	0.3	4.0	1.1
Frog	0.3	6.5	0.0
Lizard	0.0	16.6	0.0
Squirrel	0.0	11.2	0.0
Rat	0.0	5.2	0.0
Primate	0.0	6.0	0.0
Combination	4.2	0.2	1.7
Unknown	1.3	1.5	0.0

With regard to the mammals in general, the domination of mammal consumption only occurred in the months of September to December in the Terab and Air Hitam groups, when it was rainy season and mammals were to be found in abundance.

The low consumption of mammals especially in the Air Hitam group (inside the forest) and the Sako Tulang group (outside the forest), was because of the fact that both groups were engaged less in hunting and more in other activities in the rubber fields. This is especially true for the younger generation. There is a tendency for the younger generation not to

follow their parents in that tradition and become active hunters. Another reason is that rubber fields instead of relatively intact forests now dominate the areas in which the Orang Rimba live. The decrease in the natural forest has contributed to the decline in the biodiversity. This means that the variety of mammals in the area has also decreased. For example, my key informants in Air Hitam informed me that before the 1980s, there were still many elephants and tigers inside and around the Bukit Duabelas forest. However, since the 1980s, they have rarely seen tigers, and elephants have completely left the area because of the conversion of the forests. These two mammals are classified as 'sacred' (*bedewo*), the consumption of which is considered taboo.

Table 35 reflects the edible mammals consumed by the Orang Rimba in each group studied. The variation, however, does not reflect the actual consumption of all animals by the Orang Rimba in the three groups during the fieldwork. Instead, the list indicates which animals are considered to be edible. Interestingly, the three groups have different views on which animals are edible. For instance, the Air Hitam group considers primates and rats as taboo animals, while the Terab group considers those animals as edible. Despite these taboos, overall, the Air Hitam group, who live inside the national park, listed the highest variation in terms of edible animals, while the Terab group (who live in oil palm plantations) listed the lowest variation.

Table 36. List of edible mammals

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Large Size						
Rusa	Rusa Jawa	Deer	Cervus timorensis		✓	✓
Kijang	Kijang	Antelope	Muntiacus muntjak			✓
Bebi	Babi hutan	Wild pig	Sus scrofa	✓	✓	✓
Nangui	Babi putih	Bearded pig	Sus barbatus			
Beruang	Beruang	Bear	Helarctos malayanus	✓		✓
Small Size						
Kancil	Kancil	Mouse deer	Tragulus javanicus		✓	✓
Napu	Napu	Long nose mouse deer/ greater mouse deer	Tragulus napu			✓
Musang	Musang	Civet	Paradoxorus hermaphroditus	✓	✓	✓
Landak	Landak	Hedgehog	Hystrix brachyura	✓	✓	✓
Trenggiling	Trenggiling	Armadillo	Manis javanica	✓	✓	✓
Tenggelung Bulan	Tengalung	Oriental civet	Viverra tengalunga	✓		✓
Kubung	Kubung	A variety of flying lemur	Cynocephalus variegatus	✓		✓
Kukang	Kukang	Slow loris	Nycticebus coucang	✓	✓	✓

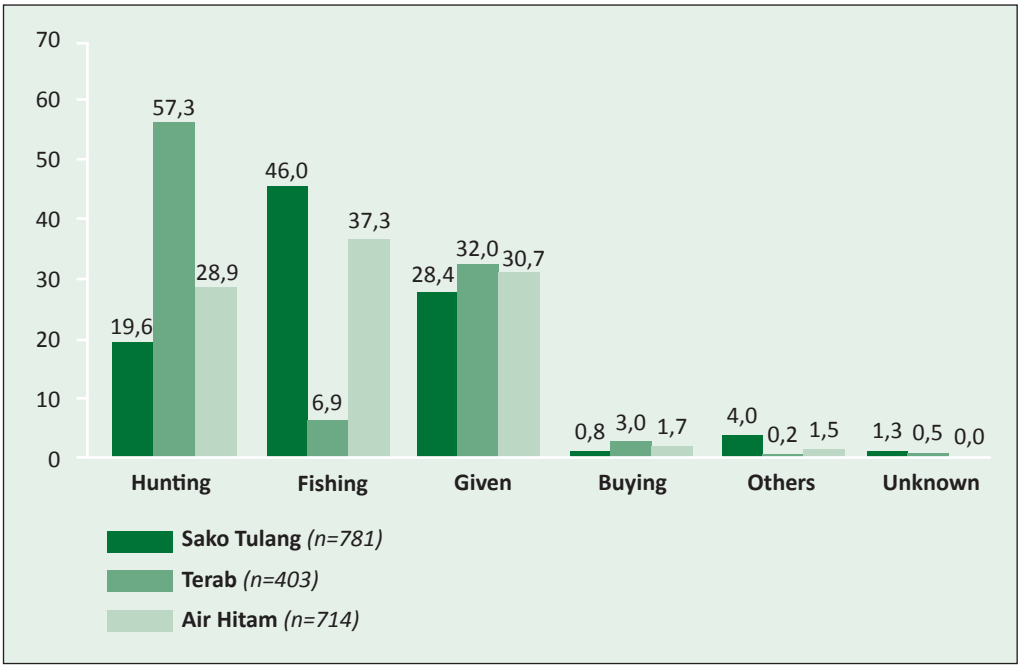

Figure 59. Origin of animal protein in all meals with animal protein consumed by the households

With respect to the sources of animal protein, most meat or fish is obtained by hunting and fishing by the people themselves. Importantly, however, the meat and fish that is obtained as a share "given" by group members, consistently amounts to roughly 30% of all animal protein across the groups. Only a relatively small portion is bought. Other important sources of animal protein worth mentioning include "the others", which consists of various combinations of donated food and fishing, fishing and hunting, and hunting and buying.

Ethnographic findings on food security

The mainstream standards for measuring food security status are based on indicators such as food availability and supply, food access, vulnerability, and sustainability (e.g. Maxwell 1996). I will here discuss these indicators in light of the combined insights emanating from the ethnographic data and food intake records. In addition, this section takes into account threats to food security, including the threats to livelihood security and access to food.

Availability

The discussion on availability focuses on the supply side of food. It can be understood in terms of the combination of ways in which Orang Rimba households acquire food, namely through: 1) their own production through hunting, fishing, gathering or subsistence farming; 2) shares received from others; 3) buying it with money earned from cash crop production (rubber, oil palm fruits), salaries from plantation companies, labor on other people's land, and collection and trade of NTFPs. However, the relative importance of

each of these varies among the three groups and also fluctuates over time, in line with seasonality and market trends.
For forest-based groups, like the Air Hitam group, the forest constitutes an important source of food, particularly in the rainy season, when wildlife, wild fruits, honey and other forest products are in abundant supply. In contrast, the months towards the onset of the dry season and during the long dry season are the most challenging and difficult in terms of availability. This is when the *remayo* season comes into the picture. During that period, the planting season has just begun, implying that sufficient time must pass before they can harvest the crops. Besides, the dry season is often associated with high infestation of their agricultural produce by pests, such as insects.
The Orang Rimba households and groups staying in the secondary forest and in the plantation areas are involved in cash crop production. By growing rubber and oil palm, they generate cash income, which allows them to buy food products on the market. The Sako Tulang group exemplifies this situation. For them, the onset of the harvesting season is an exciting time. This is on condition that the households do not experience poor harvests. A good harvesting season enables the households to obtain income to buy rice, spices, cigarettes, sugar, coffee, tea, noodles, as well as other foodstuffs to supplement their forest-based diet. Conversely, when the harvest is poor, or when rubber trees and oil palm have not yet reached maturity, lack of income means they are unable to buy enough foodstuffs.

Accessibility
Accessibility is associated with the right to food, the right to produce, to purchase, to exchange and to receive food. It has long been an established fact that food availability alone is not sufficient for a community to attain food security. The access they have to food that is available is as important if not more so. Sub-indicators of food access that can be used include control over land and household income (Roth 2013 and Sharma 1992). In the traditional setting, food access is not very distinct from food supply. This is evident in the case of the Air Hitam group, who still depend much on what the forests can provide for them. They have access to food by gathering, hunting, or sharing with relatives when they fall short of food supplies.

However, hunting, fishing, gathering and cultivation require a lot of land as well as flexibility of access. An important sub-indicator for food accessibility is access to land. Field evidence suggests that the Air Hitam group who lives inside the Bukit Duabelas National Park and the Sako Tulang group who lives outside the park, but still in the secondary forest areas, have easier access to land. As a consequence, their access to food is relatively better compared to the Terab group, who live in the plantation areas belonging to corporations. In this deforested area, the Terab group has the daunting task of entirely adjusting their livelihood, and the group members have to struggle to acquire their daily food. Besides, the limited access to land makes it difficult for them to lead the nomadic and wandering way of life they are accustomed to.
Moreover, in this new setting, monetary income has become a prerequisite for access to food. Money has been widely used by the Orang Rimba since the beginning of the transmigration era in Jambi in the 1980s, and has replaced the traditional barter system.

The increasing importance of money as a means to access food and the associated increase in cash crop production has also resulted in growing disparity in income between groups and among households. For the Terab group as a whole, it is hard to make ends meet, as they have limited income sources compared to the other two groups. However, within the most cash-crop dependent group, the Sako Tulang group, significant differences in income exist among households as well, and therefore in access to food.

Vulnerability

Both availability of and access to food are affected by various risks that increase vulnerability (FAO 2016). Generally speaking, these include risks such as crop failure, natural or other disasters, crises and shocks (such as price volatility, market failures, and political and social instability) (Chapter I). In the case of the Orang Rimba, specific risk factors include: various pressures to forests, seasonal changes, *melangun*, price volatility of rubber, oil palm and NTFPs.

Deforestation, coupled with insecure access to (forest) land, is the main contributor to vulnerability. The documented history of national policies on transmigration, the encouragement of the logging industry, and the promotion of cash crops as the engine of development, have together resulted in deforestation. This has much reduced the Orang Rimba's ability to obtain food by hunting, fishing, gathering, and cultivation. That said, many Orang Rimba have succeeded in adapting to the new, albeit hard, situation by producing rubber and buying rice. In their case, new vulnerabilities arise from changes in market prices of both rubber (supply side) and rice (demand side).

Seasonality is another factor of importance and as explained in Chapter 1, seasons play a major role in Orang Rimba lives, regardless of their livelihood strategies. During the wet season, food is plentiful, but in the dry season, households face scanty supply of food, whether it is obtained from the forest or bought from the market.

In general, it can be stated that those who are still living inside the forest (the Air Hitam group) are more resilient to seasonal changes than those living outside the forest. The Air Hitam group switch from relying on hunting during the wet season, to fishing and collecting turtles and tortoises in dry river beds during the dry season. For the Terab group, constraints in having fields of their own to grow their own food crops makes them heavily dependent on hunting. Unfortunately, the number of wild pigs caught during the dry season plummets, which is contrary to the condition in the wet season. The Sako Tulang group's dependency on rubber during the dry season increases their vulnerability because of unstable prices.

Even though I did not quantify the amounts of food consumed, my field observations suggest that Orang Rimba eat smaller portions during hardship periods, notably in the dry season. Moreover, the quality of the food they eat declines since the majority of the food consumed consists of carbohydrates, and limited amounts of animal protein. The dry season also causes vulnerability in terms of health, and is associated with the spread of diseases such as tuberculosis, flu, and fever. Children are in the most vulnerable position and prone to several diseases.

The culturally important practice of *melangun* increases vulnerability. It involves collective control of diet and may last for days, weeks, or even months, when necessary. Those who

do not have rubber trees as a safety valve, such as the Terab group, face a precarious food security situation.

To supplement decreasing economic resources as the forests decreased, the Orang Rimba have had to make often culturally costly adjustments and adaptations. This has included attempts to lead sedentary lives, cultivating cash crops as well as engaging in trade with other ethnic groups through intermediaries. To some extent this has reduced some forms of vulnerability. Many Orang Rimba can now buy rice and other basic necessities from the market. That said, with the increasing importance of the market several problems may threaten the food security of the Orang Rimba. These include the fact that they now have to earn an income to buy rice, which is not easy given their limited knowledge, in addition to the discrimination by the majority which translates into poor payments for their products and labor, and vulnerability to rising prices of products.

Sustainability

Sustainability is discernible from the degree to which the group has access to sufficient quantity and quality of food in the long term. This also means that the magnitude and frequency of food shortages, and the coping strategies in place, serve as good indicators of the extent to which the sustainability of the group's food security is ensured. The following strategies will be discussed here: food storage, food sharing, reducing food consumption and reliance on external assistance.

While the Orang Rimba do not generally store food for extended periods, they do preserve meat obtained from hunting through *salaue*, a traditional method that makes it possible keep the meat for several days. It involves smoking, slow cooking for several days, and fermenting. The Orang Rimba use this technique not only to store meat so that they can consume it for several days, but also to enjoy the different taste of the smoky meat.

However, food sharing is a much more important strategy to ensure sustainability of food access over time. As the data on food sources show, sharing is most important with regards to meat, around 30% of which is obtained from receiving a share across the three groups. Hunting is considered to be a social exercise and is done both individually and in small groups. In both cases, hunting proceeds are shared with others, including members outside the group, if the quantity allows. I once observed how my key informant in Sako Tulang had a very big catch, which he shared with his mother who stays in a different group. It took him about one hour by motorbike to get there. While meat from hunting expeditions is subject to wide reciprocal distribution and based on my observation it is seen as "social storage", staple food is not widely shared. With the exception of cassava, other staples, notably rice, are considered as 'private' food.

Sharing food, and meat in particular, is done in return, as expected. Households or heads of households that flout the customary rule will be considered ravenous; consequently, the individual and household will receive sanctions that often culminate in estrangement/ostracization. The married women, not the men (or husbands), execute the distribution of food within the group. Additionally, the married women perform the task to ensure equality of the food rations among members of their group. The Orang Rimba manage their food distribution by prioritizing those who are in a dire need such as children and pregnant women.

If households nonetheless face food shortages, for example as a result of unsuccessful

hunting expeditions, which is often the case during *remayo*, they both reduce the quantity of food they eat as well the components of meals. The findings from the fieldwork indicate a situation whereby the Orang Rimba eat rice which they mix with salt, sugar or minced tubers (notably cassava), which are obtained from the gardens surrounding their compound. This eating pattern is common during periods of food shortages, which often occur during the dry season, during periods of *melangun*, and during land preparation and planting.
However, food shortfalls that are caused by a prolonged dry season or specific event within the group (such as *melangun*) often induce the Orang Rimba to seek help from other ethnic groups, mostly via their w*aris/jenang*, and recently via their middlemen. In addition, the Orang Rimba have been receiving various benefits from government and non-government relief programs.

Summary
The food security status of the three groups studied has been discussed by looking at the following factors: food availability, food access, vulnerability, and sustainability. Table 36 provides a comparative summary of the differences and similarities between the groups.

In terms of food availability, there are some similarities and differences among the three groups. The Sako Tulang and Terab groups rely on cash income to buy food supply. In the case of Sako Tulang, most income is derived from their plantation farming activities, especially from rubber and to a lesser extent oil palm. The Terab group relies more on the plantation companies to generate income in the form of monthly salaries and intermittent income for their labor services. The Air Hitam group's dependency on cash income is relatively small since they obtain much of their food supply by hunting, fishing and gathering. Moreover, all three groups face seasonal variations in food availability and access. In short, the Orang Rimba's food security varies from good in the wet season to precarious in the dry season. In the wet season, foodstuffs are in plentiful supply, but in the dry season, households face scarcity of all foodstuffs, ranging from products they gather from forests, wildlife they hunt, and rice they buy from markets. Although the frequency in which meals are consumed is quite normal, especially during the dry season, the risk of households either suffering grave food shortages or just eating barely enough to survive increases. During the fieldwork, occasionally I witnessed people eating a combination of rice and salt. I also witnessed children eating oil palm fruits when they did not have enough food in one of my fieldworks. Among the three groups, food sharing is a common mechanism to cope with such scarcity and fluctuations.

There are two sub-indicators or key areas for food access, which are control over land and household income. The three groups have differentiated access to land. The Sako Tulang group lives mostly in secondary forest areas where they manage their plantation, the Terab group lives in plantation areas belonging to the companies, and the Air Hitam group lives inside the national park. These differences in control over land are reflected in each group's income stability. The Sako Tulang group has the most stable income compared to the other two groups, while the Terab group has the least stable income. The Air Hitam group's sources of income are most diverse.

Table 37. Comparative indicators of food security in the three groups

Indicator of food security	Key Area	Sako Tulang	Terab	Air Hitam
Availability	Food supply	Cash income from farming: rubber and oil palm + NTFP	Cash income from the company +NTFP	Hunting and fishing + NTFP
		Buying	Buying	Gathering
		Hunting and fishing	Hunting and fishing	Sharing
		Sharing	Sharing	Buying
				Cash income from farming: rubber
Access	Control over land	Living in secondary forest areas, limited hunting area	Living in plantation areas, limited hunting area	Living inside the national park, vast hunting area
	Household income	Stable	Very unstable	Relatively stable
Vulnerability	Various pressures to forests	Major encroachment from other ethnic groups	No forest at all	Lesser encroachment from other ethnic groups
	Melangun traditions	Short period, maximum 3 months	Frequent and long periods	12-24 months on average, per melangun period
	Price volatility of NTFPs and cash crops	Very exposed	Exposed	Fairly exposed
	Seasonal changes	Fairly influenced	Least influenced	Highly influenced
	Health condition	Least health problems	Highest health problems	Moderate health problems
Sustainability	Food shortage	No	Yes	No
	Hunger incident	None	Costing 15 lives in 2015	None
	Food sharing	Within the group	External parties	Within the group
	Dependency on external assistance	Least dependent	Highly dependent	Moderately dependent

Another common feature across the three groups is their vulnerability in monetary transactions, whether it is in selling their cash crops or NTFPs, or buying food and other products. Having limited information on market prices, and acting mostly through intermediaries, they are prone to manipulation and exploitation. This is exemplified by the role of the *jenang*, who negotiates on behalf of the Orang Rimba in trade and other issues, but often does so to his own advantage. Especially families with a greater number of dependents easily become indebted to the *jenang*, which creates structural dependency. These asymmetrical relations continue to form an obstacle to the Orang Rimba's food and livelihood security.

6.3 The Orang Rimba revisited

It was 64 years after Van Dongen (in 1906) that a Polish anthropologist – Janusz Kamocki – conducted fieldwork among the Orang Rimba who lived along the Medak River in Banyuasin Regency, South Sumatra. Kamocki's research on the Orang Rimba was conducted during 1970-1971. However, his ethnographic research faced major obstacles, the most important of which was finding camps where the Orang Rimba lived. He only succeeded in meeting a few camps, the so-called *Kampung Kubu*,[65] in the Medak River area. Consequently, he decided to collect information about the Orang Rimba from officials of the Ministry of Social Affairs in South Sumatra and travelled around Medak River to conduct the research. The article Janusz Kamocki wrote about his findings, published in 1979, provided a glimpse of the material culture of the Orang Rimba who lived along the Medak River.

There is little doubt that between the 1900s and 1970s research on the Orang Rimba was scant and limited to, among others, publications by Van Dongen in 1906 and Visser in 1939.[66] Another publication that mentioned the Orang Rimba during that period was a publication entitled "A Special List of the Tribes of Primitive Hunters and Food Gatherers", which was a Bulletin of the International Committee on *Urgent Anthropology and Ethnological Research* in 1958. The findings of the publication predicted that the Orang Rimba had no future, and would become extinct, largely as a consequence of the development process. Moreover, the publication went on to state that the Orang Rimba would have no option but to change their nomadic way of life and become farmers (Kamocki 1979: 91).

After Kamocki's work, Oyvind Sandbukt, a Norwegian anthropologist conducted extensive research among the Orang Rimba, also in the 1970s. Sandbukt's research, which involved nine months of fieldwork in the Air Hitam area, Jambi Province is credited for being the

[65] *Kampung Kubu* was a term used by the Ministry of Social Affairs adopted by the past Dutch administration for resettlement areas provided for the so-called *Kubu Jinak*. The Dutch administration used the term *Kubu Jinak* for those who could cooperate and were willing to make contact with other societies. The term used for the Orang Rimba who live inside the forest and avoid any contact was *Kubu Liar*. Those two terms are no longer appropriate to use.

[66] Both publications by Van Dongen and Visser are in Dutch.

first to conduct ethnographic research among the Orang Rimba. Sandbukt's findings on the Orang Rimba, which were published in 1988[67], are especially relevant for my dissertation. Except for Persoon's publications in 1989 and 2000, there has been limited research on the livelihood of the Orang Rimba after Sandbukt's research findings.[68]

What is important to note, is that half a century after European scholars predicted the 'extinction' of the Orang Rimba, the community still survives. In September 2015, Persoon offered an alternative view on the changing futures of the Orang Rimba.[69] He reflected on the many projections by past Dutch colonial administrators, Indonesian civil servants, anthropologists, missionaries, and development workers on the future of the Orang Rimba. Most of these predicted that the Orang Rimba would become extinct or assimilate into mainstream populations due to the rapid development process in Jambi Province. However, as Persoon demonstrated:

[…] the Orang Rimba surprisingly have not disappeared and they have not completely assimilated into the dominant Malay society and other in-migrant societies from Java either. On the contrary, they have adapted to new conditions in a large variety of ways. They have taken up new sources of livelihood that were always considered beyond possible options for the Orang Rimba. They themselves did not want to become farmers and outsiders always thought that the Orang Rimba were not capable of making that transition. But present-day livelihoods include cultivation of oil palm and rubber trees. They also use their rubber gardens as a protection fence (*hompongon*) against intruders of their land. Some of the Orang Rimba have also become middlemen. One of them, *Tumenggung* T, is a very successful example. The Orang Rimba have retained their identity and even developed a sense of pride in being so much different from the 'ordinary village people'. External support of some government officials and an NGO promoting indigenous peoples' rights are of great help in this respect; even though some of the support programs seem to be underpinned by the desire to compensate for the forest lands without much attention on the actual loss of irreplaceable livelihood and existence. (Persoon 2015)

The worst-case scenario and pessimistic view, which is evident in past predictions about the future of the Orang Rimba, is understandable considering the limited understanding there was at that time about livelihoods of hunter-gatherers. Many scholars and practitioners (past and present) consider the Orang Rimba as passive actors and victims of multifaceted external pressure and forces, including the development process. The botched prediction of the "extinction" of the Orang Rimba and pessimistic scenario has

[67] See Sandbukt, Öyvind. 1988. "Resource Constraints and Relations of Appropriation among Tropical Foragers: the Case of Sumatran Kubu" in *Research in Economic Anthropology* 10, pp. 117–156

[68] Current scholars such as Elkholy (1998), Soetomo (1995), Weintre (2003) Sager (2008), Prasetijo (2011, 2015) devote attention to issues such as tradition, custom, belief system, identity, and other cultural aspects of the Orang Rimba.

[69] In the 11th Conference on Hunting and Gathering Societies, Persoon gave a presentation on the paper entitled "The changing futures of the Orang Rimba (Jambi, Indonesia), unpublished, Vienna, 7-11 September 2015. Conference on Hunting and Gathering Societies is a contemporary platform for scholars who are interested in hunter-gatherer-related issues. Up to its 11th event, the scholars who attend the conference mostly came from Europe, the USA, and only few from Asia, particularly from Southeast Asia.

not only been proved wrong for the Orang Rimba, but also for other hunter-gatherers, like the Agta (Minter 2010).

My research underscores the fact that the Orang Rimba always come up with ways to survive and "protect" their identity as the Orang Rimba (Forest People) and preserve their way of life. The Orang Rimba have the ability to build their own resilience mechanisms as a response to changes that affect their lives and livelihood. As the development processes have picked up pace, they impacted lives of the Orang Rimba, largely as a consequence of forest degradation. In response, the Orang Rimba have used internal and external tactics and strategies to adjust and adopt their livelihood and way of life in line with conditions that such a context necessitated.

More importantly, the Orang Rimba are active actors who participate in various development processes. The most vivid example is their participation in commercial logging, but they are also active as commercial NTFPs traders, and they are involved in commercial hunting and agriculture activities (oil palm and rubber) as described in Chapters III-V. Such decisions became inevitable due to the involvement of key companies as well as the interaction with other ethnic groups such as the Orang Melayu and the transmigrants. Consequently, a mutually beneficial (although asymmetrical) relationship emerged, principally out of economic interest. Such activities continue to this day, albeit on varying degrees.

Another example of the Orang Rimba's participation in development processes is their pragmatic acceptance of programs that attempt to resettle them, even though such programs are detrimental to their culture. According to the Orang Rimba's culture, it is prohibited to have a permanent house with walls. Another cultural restriction with respect to settlement is that the Orang Rimba have to preserve a wandering lifestyle of *melangun*. According to the Orang Rimba, *melangun* is a core aspect of being Orang Rimba. It would certainly be interesting in the future to look more closely at to what extent the various groups of Orang Rimba, living in different conditions, continue to practice *melangun* and to see how the transition towards increased production of cash crops, like rubber and palm oil, impacts this tradition. .

The question then is: why have the Orang Rimba accepted resettlement programs implemented by the Indonesian government since the 1960s? As Tsing (1993) writes in relation to the Meratus people (South Kalimantan) through her storyteller Uma Adang, the Orang Rimba would never say "no" to any governmental project. As the Meratus people were receptive to the governmental development programs, so are the Orang Rimba. It does not matter if, subsequently, they do not use the facilities such projects offer to them, and in fact end up selling the houses provided by the government, and in many cases use such houses as transit shelters rather than places of residence, or just simply abandon them.

Generally speaking, Orang Rimba have great respect for the country's leaders (such as Sultan in the Sultanate era, and government officials in recent days). Their *seloka adat* or customary law states that "*Halom sekato Rajo, Rumah sekato Tungganai*", meaning that externally the Orang Rimba will follow the rules of their *Rajo* (government), while for

internal purposes they have their own autonomy, and consider leaders of their groups to be their representatives.

The Orang Rimba do not have an aggressive stance when faced with external pressures, including the pressures on their livelihoods. Their culture is more reactive or defensive, always compromising and avoiding conflicts with others. It is because of this culture that other ethnic groups label the Orang Rimba as "*kubu*", literally "hiding" or "protecting" themselves from others. This conflict-avoiding strategy has also been noted for the Agta (Minter 2010).

6.4 Food security among contemporary hunter-gatherers

At the 11th Conference on Hunting and Gathering Societies (CHAGS) conducted in Vienna, Austria in September 2015, food security was a major issue. In the panel on food security, scholars portrayed a shift in the trend of food consumption among hunter-gatherers all around the world. They argued that there is a significant decline in the dependency of hunter-gatherers on traditional food. Hunting and gathering modes of production to meet year-long food consumption for hunter-gatherers are still applicable, but the transition to the market-based food has become discernible in recent years. The evidence from the Inuit in the Artic (Wenzel 2015), the Eskimo in North America (Collings 2015), the Australian Indigenous Societies (Weichart 2015), the BaAka in Central Africa (Remis and Robinson 2015), and my own presentation on the Orang Rimba in Indonesia (2015), clearly attest to that trend.

The shift in food consumption trends among hunter-gatherers is largely attributable to changes in environmental conditions. Most hunter-gatherers have, to some extent, made a transition towards agriculture to supplement their subsistence (Griffin 2018). Specifically, Wenzel (2015) argues that the shift in food consumption among hunter-gatherers is induced by the decline in traditional ecological knowledge and skills related to land use, minimal resources to access traditional food, environmental changes, and the loss of desire to consume traditional food.

Collings presented interesting examples related to the decline in health as well as increasing health disparities caused by rapid socio-economic and environmental changes among the Eskimo. Hunter-gatherers tend to leave their traditional foods and depend on imported foodstuffs which make traditional sharing networks superfluous, hence increasingly forgotten. In other words, hunter-gatherers not only become more dependent on modern and market-based foodstuffs, but also become more individualistic as they abandon their traditional knowledge and culture.

Weichart presented another case in which contemporary hunter-gatherers were increasingly relying on other sources of food than their traditional and natural resource-based sources. She showed that the shift in food consumption behavior of Australian indigenous peoples from traditional sources to market-based systems has led to a decline in their health status, hence rising food insecurity. Sedentary livelihoods do not augur well for the traditional food habits of hunter-gatherers, forcing them to consume low quality food in an era of abundant food supplies. This situation is worsening

because besides indigenous peoples having limited education and a different social status compared with their new neighbors, they generally have low incomes, all of which hamper their access to food.

Long before current scholars and anthropologists began to argue about the shift in food behavior among hunter-gatherers living in tropical rainforests, Headland raised the issue as early as 1987 in an article entitled 'The Wild Yam Question' which offered an alternative hypothesis on how hunter-gatherers have not only been dependent on natural resources provided by rainforests through hunting and gathering, but also on their neighboring farmers. His findings were based on the Agta in the Philippines, which showed that hunter-gatherers have long fulfilled their daily food consumption by establishing relationships with their farmer neighbors, who provide them with agricultural commodities to supplement their hunting and gathering outcomes. To that end, the Agta diet not only comprises traditional foodstuffs from the forest, but also agriculture products from their non-Agta neighbors. This is because if the Agta had to rely only on traditional foodstuffs from the rainforest, they would not have sufficient supplies for a full year of consumption due to the limitation of wild yams. That is why the Agta have established a symbiotic relationship with their non-Agta farming neighbors, with whom they exchange their forest products and animal protein in return for starchy foods. Another way of putting this is that the Agta have adapted the strategy of having long-term relationships with non-Agta neighbors to supplement insufficient forest foodstuffs (Headland 1987). This idea is very relevant to the present situation of the contemporary Orang Rimba.
On the surface, the Orang Rimba appear to have enough food to meet their basic requirements on an everyday basis. Moreover, wild forest foods continue to form a significant part of daily diets, although the extent of their contribution varies between the three groups. Overall, therefore, the Orang Rimba do not fit the above-noted trend of hunter-gatherers who almost completely abandon their traditional diets. Neither do they follow the tendency of previously subsistence-oriented societies who shift to diets in which imported, high-energy, but nutrition-low food is overrepresented (Haddad et al. 2015; WHO 2017; Albert et al. 2020).

However, a deeper look reveals that staple food, meat, and fish dominate the diet. Staples form the steadiest meal component. Particularly noteworthy is the increasing importance of rice as the main staple in all three groups. It remains to be seen if rice, which is purchased on the market, is going to outrank or even replace home-grown and foraged staples over time. If it does, this is cause for concern because white rice is of lower nutritional value than root crops. Presently, wild tubers are mostly consumed as famine or emergency food during times of crisis or hardship, as is also the case among the Agta (Minter 2010; Hagen et al. 2017).
The diet is also relatively rich in animal foods. The regular consumption of wild meat and fish may ensure sufficient intake of important nutrients. Animal foods are rich in highly bio-available iron, zinc, and vitamin B12, as well as protein and fat (Vinceti et al. 2013). However, vegetables and fruits are rarely part of regular meals. This may also signal a problem, because vegetables, mushrooms, and legumes make important nutritional contributions to dietary quality (Rowland et al. 2016). Leafy vegetables, fruits, nuts, and

other plant foods are important for intake of vitamin A, iron, folate, niacin, and calcium. Lack of some micronutrients in the diet can cause significant health-related problems (Vinceti et al. 2013).
It is important to note however, that this study only takes into account what has been consumed during meals. Thus, the consumption of (wild) fruits, nuts, and vegetables in between meals was not recorded, which potentially leads to a downward distortion of the presence of these food items.

Individual Orang Rimba points of view vary on defining food security. At first, it is difficult to get an answer on what food security is. For the Orang Rimba, their understanding of food security simply means the ability of the household to provide enough food for their family, day after day, without getting worried about having nothing to eat. In other words, it can be said that for the Orang Rimba food security is the condition whereby the household has sufficient food supplies to last them at least several days. This reduces the fears that foodstuffs may soon run out.

The second understanding of food security among the Orang Rimba is inextricably intertwined with a compliance with cultural norms. They see that the rapid pace of development that has occurred around them over the years has largely had negative effects on their lives. Despite slight improvements, the rapid development has left them with little terrain to roam around and search for wild food crops and to hunt wild animals. The encroachment on their source of livelihood (the forest) by modernization and development has resulted in a scarcity of animals for them to hunt and other wild food for them to gather from the forest.
Thirdly, for the Orang Rimba, food security cannot be separated from the poverty they face on a daily basis. Based on in-depth interviews, the Orang Rimba experience abject poverty. The rich natural resources of the forest they own and the expanse of their terrain no longer provide them with sufficient means to attain food security. On the contrary, they consider nature to have lost its importance as far as ensuring their sustenance is concerned. Their environment does not provide sufficient food for them. Forest land has decreased significantly due to land conversion. Wild animals have become more scarce, poor harvests have become a frequent and common problem (in the case of rubber and the fruits of the oil palms). Nature is no longer perceived as friendly, and, according to them, its decline is responsible for their current state of food insecurity. Together, these factors have not only aggravated food insecurity, but have immersed them into a vicious cycle of poverty. These qualitative, emic conceptions of what forest loss means for food security confirm the growing body of quantitative evidence of the detrimental impacts of forest loss on forest-dependent peoples' food security (Ickowitz et al. 2016; Galway et al. 2018).

As I pointed out in the introductory chapter, there is a close relationship between food and livelihood security. When livelihood security is threatened, it reduces the food security status and vice versa. The rapid pace of development that has occurred around the Orang Rimba over the years has largely had negative effects on their livelihoods. Despite slight – I would argue, cosmetic – improvements in their lives, the rapid pace of development has

left them with little terrain to roam around and has reduced wildlife abundance, meaning that hunting has been more onerous and takes longer to be productive. This is more so during prolonged dry seasons. The Orang Rimba's forays into cash crop farming have not produced substantial gains. The decimation of rainforests, largely by outside parties, is an affront to their lives in general, and their level of food security in particular.

Maxwell (1996) argues that despite the availability of abundant food, some people may suffer from hunger because they do not have sufficient access to it. Moreover, food availability and accessibility are prone to various failures in production, trade, price, income, political, and social risks. A sustainable food security system must be strong enough to absorb various risks, including, but not limited to, periods when domestic production declines. Amartya Sen (in Lassa 2005) shares Maxwell and Slater's (2003) viewpoint on food security by contending that hunger and food shortages for certain individuals or communities are often caused by a lack of access to food, rather than food availability. Abundant food supply/production, he argues, cannot itself improve food security for individuals without the right of access to food at the household level (Chapter I).

Indeed, food availability is not sufficient for hunter-gatherer people to attain food security. The access they have to food that is available is as important if not more so. Three sub-indicators of food access are used: activities to acquire food, control over land, and household income. The Orang Rimba eke out a living from a combination of livelihood strategies, namely cultivating their fields, hunting, fishing, gathering forest products, and offering services (labor) to other people. Nowadays, the rubber field is the mainstay of the economy for those living inside, surrounding or outside the forest. Cash crops are considered assets, while annual crops (small amounts of tubers, fruits, and vegetables) fulfill day-to-day subsistence needs.

In this sense, Dove's thesis (1996) on the Kantu Dayak in West Kalimantan is in line with my findings, based on the most recent socio-economic context. Dove's findings are not only pertinent for the case of Indonesia's rubber smallholders, but also give an alternative view of how Indonesia's forest-dwellers have adopted tactics and strategies to survive. Dove stresses that in order to survive, the Kantu use the dual economy to fulfill their subsistence needs and, at the same time, they produce perennial cash crops to fulfill their secondary needs. Both subsistence food crops and perennial crops contribute equally to the livelihood of the Kantu. In addition, Dove also states that by combining the two systems, the Kantu have achieved flexibility and resiliency to both market risk and environmental risk. The rubber system is the Kantu's strategy for coping with the environmental risk, while subsistence cultivation helps the Kantu to alleviate market risk. Dove suggests that if there are market failures or environmental failures, the sources of failure do not come from the internal situation; rather they are the result of external institutional factors. It is more "their lack of political capital that makes them incapable of defending themselves" (Dove 1996: 53).

6.5 General conclusion

This dissertation unveils a number of findings on the Orang Rimba's food security. First, it demonstrates that the Orang Rimba can still be considered hunter-gatherers as defined by Kelly (2013). Despite their dependency on rubber and oil palm plantations as a source of livelihood, their way of life and identity as hunter-gatherers remain strong. This is evident from the continued importance of forest-based livelihoods, mobility, as well as a strong sharing ethic.

Second, however, this way of life is under great pressure. The decline and degradation of forest areas are the most visible challenges and threats to the way of life and livelihood of the Orang Rimba. It is no longer possible to maintain traditional forest management practices that were based on deep-rooted values intended to keep an ecological balance between the forest dwellers and the environment. This undoubtedly affects the extent to which a mobile lifestyle and the associated livelihoods can be maintained. Moving from one location to another works well in an expansive and abundant environment, but may generate food security problems in today's situation.
The increasingly limited and confined areas force the Orang Rimba to find alternative sources of livelihood, which makes them active actors in these processes of change rather than timid victims. The three groups of the Orang Rimba studied respond to their changing environment by taking up plantation farming, while maintaining the *melangun* tradition, and combining traditional and commercial modes of production to fulfill their daily needs. This is in line with observations on food security patterns observed among other contemporary hunter-gatherers, who are similarly forced to combine methods to acquire food. Consequently, the dependency on cash income and the market system is increasing (Collings 2015, Remis and Robinson 2015, Weichart 2015, and Wenzel 2015).

Third, therefore, the analysis on both daily food intake and ethnographic findings reveals the fact that the Orang Rimba in general face *food insecurity*. Their important asset, which is the natural forest, is no longer large enough to cater for their food needs all year round. Food gathering and hunting activities no longer bring sufficient foodstuffs as swathes of natural forests are signed away by the government to both private and state-owned rubber and oil palm plantations, timber logging concessions, infrastructure development (Trans Sumatra Highway and its web of connecting road networks), and settlements for transmigrants, thanks to national government economic-growth-at-any-cost oriented development policies.

Fourth, food sharing is an important social strategy to cope with food insecurity during food shortages, especially in the dry season. Regardless of the changing livelihood situation, each of the three Orang Rimba groups still maintains their food sharing practices. The importance of food sharing moreover serves as a strong strategy to achieve adequate food supply, which echoes earlier observations on the importance of reciprocal food sharing in egalitarian societies (Woodburn 1982; Kaplan and Hill 1985 in Hunt 2000).
Fifth, my study reveals considerable differences among the Orang Rimba. The mixed livelihoods created by the three groups of Orang Rimba under study result in varying

degrees of resiliency. Those who live inside the protected forest (the Air Hitam group) fare better than those who have become entirely dependent on plantation land over which they have no control, like the Terab group, who are least food secure. The Sako Tulang group, who live on the forest margins, have succeeded in transforming themselves into successful rubber farmers and some even in middlemen in the trade.
This is not to say that the process is easy. The key message here is that by participating in rubber trading, the Orang Rimba have registered success in adopting roles that have generated economic benefits not only for their households, but also for their respective groups. They have also contributed to the dynamic meaning of *waris* among the Orang Rimba.

The success stories of these actors are widely understood by other Orang Rimba groups. They perceive the new situation in both negative and positive ways. An interview conducted with another *tumenggung* in Air Hitam during my 2013 fieldwork reflects the complexity of social and cultural changes in the current situation:
"Look at what has happened to us, the native people. We are now faced with all the outsiders. The constant interactions (original word: *berhubungan*, connected) with them in many cases turns out to bring better incomes, especially in the trading of rubber and non-timber forest products. However, in terms of ecology (the original word used was *lingkungan*, which means environment) and health, the interaction (*hubungan*, connection) can create worse situations. The loss of our forests is clearly visible and the pressure on the forest has also worsened in recent days. Our forest is decreasing right now. In the past, the outsiders could only reach the Pematang Kabau area. Meanwhile, in the Air Hitam area, there were no outsiders. Unfortunately, now, they can freely come and go into our forest. Some of them have settled around us. For us, it is difficult, especially if we want to conduct our *melangun* ritual after the passing of our members. That applies to our smaller roaming territories as well. Sometimes they also compete with us while hunting wild animals since it is worth the money. Slowly but surely, we have to be ready to face the extinction of the forest and the existence of oil palm and rubber plantations. Moreover, we have difficulties finding our traditional food, which forces us to eat their food. In the past, we were not familiar with 'strange' food like cakes, instant food and beverages, snacks, and other 'modern' food. We only knew natural food from the forest such as cassava, fruit, fish, and meat. The stranger the food we consume, the more diseases we get. I know that we can't depend on the forest forever, but the forest is still our most valuable treasure. The forest is our identity, our culture, and it is the place where our former family members are buried. If we lose the forest, how can we still be called the Orang Rimba?"

In addition to demonstrating the strong link between the forest and Orang Rimba identity, this narrative also demonstrates that the establishment of the Bukit Duabelas National Park, in which the Air Hitam group lives, has not ensured that the forest is effectively protected from encroachment. While this study does find that the Air Hitam group's diet is still relatively diverse in terms of the presence of forest foods because, among the three groups, they live in the most intact forest, that forest is still under threat.
The *tumenggung*'s statement thereby echoes the experiences of the Agta living in the

northeastern Philippines, whose livelihoods continue to be threatened by ongoing forest degradation and forced displacement by tourism development, despite the establishment of the Northern Sierra Madre Natural Park in 1997 (Minter 2010; Hagen and Minter 2020). Finally, the way Orang Rimba perceive food security differs from that held by the mainstream majority, which explains why programs initiated to improve food security have so far compounded the situation rather than provided long-term solutions. For the Orang Rimba, food security not only concerns the condition of a household, enabling it to meet its need for food in terms of quality and quantity, but food production and consumption also need to be in line with cultural customs. Food security is inextricably linked to cultural security and social solidarity.

These findings lead me to make the following observations regarding the past and future of food security interventions among the Orang Rimba. Achieving the goal of being free from hunger is a basic human right, including for hunter-gatherers in Indonesia like the Orang Rimba. However, the bitter reality is that efforts to achieve economic development and welfare for these groups are a low priority for the Indonesian government, which is focused on, among other things, promoting modern capital-intensive industries. As reflected in the development priorities of the government since the 1970s to date, the industry sector becomes the backbone of the economy in Indonesia. Meanwhile hunter-gatherers receive least attention from the government due to their small population numbers and the general remoteness of their locations. As the case of the Terab group eloquently testifies, rapid development of plantation industries, which has been the cornerstone of regional development, has been achieved at the expense of the lives and livelihoods of hunter-gatherer people.

Government assistance has been ineffective as it focuses on acculturation through resettlement and lifestyle changes, and thereby tends to aggravate rather than improve things. When addressing food security problems of 'fragile' communities, it is advisable to seek the participation of their cultural leaders to come up with solutions that are comprehensible to the community concerned and rooted in their specific perspectives of food security. Experience tells us that imposed solutions will fail in the long term. The resettlement programs, food assistance, and capacity building projects implemented by the government did not solve the problems and instead induced a host of new, more complex problems.

The programs introduced by the Indonesian government to redress the food security problems facing the Orang Rimba therefore need an overhaul in terms of their form, substance, and orientation. These programs must take forms that are culturally acceptable, preceded by communication with their representatives, and implemented, monitored and evaluated, not in terms of how they succeed in terms of removing obstacles posed by development efforts (to owners of forest concessions, oil palm and rubber plantations), but to enable the Orang Rimba to lead lives that are culturally meaningful, hence sustainable. This is in line with the findings of Maxwell (1996), showing that food security must be understood in terms of the rationality and logic of the persons or social units involved. This can be translated into providing room for the cultural aspect

of food security. Better communication of the goals, objectives, and livelihood impact of such programs will improve their success rate. Government institutions and other organizations should also reconsider their perception of the Orang Rimba as remote, marginal, primitive, and far from civilization.

The government should review its aid programs to the Orang Rimba and examine whether the programs are really aimed at the right target. There must be a re-evaluation of whether aid programs, such as food assistance during food shortages (as in the recent case involving the Terab group), providing new and uniform houses in permanent settlements, offering cattle, and even handing out cash aid have been targeted properly.
There is no evidence of organized state involvement, either at the regional or national level, which would help food-insecure households cope in lean times, as occurs on a regular basis with other poor, urban Indonesian households. Perhaps the activities of the regional and national governments can be structured to intervene in upcountry areas where the Orang Rimba live by investing in foodstuffs diversification efforts, food preparation improvement exercises, establishment of granaries, and other relevant measures to strengthen local food security and resilience in general and during the dry season in particular. That would go a long way to shaking off the allegation of an urban bias in the area of food security.

Despite the designation of the Bukit Duabelas area as a national park, the government seems committed to pulling the Orang Rimba and other communities away from their ancestral livelihoods to become active participants in social and economic development in a much wider context. Community resettlement centers can be seen as an effort by the government to confine the Orang Rimba to certain locations. This enables them to have easy access to public services such as health care, education, sanitation, and other aspects of 'drivers of development'. These reserves may be seen as a way to clear the remaining forest areas and open them up to unfettered commercial activities, which would not be possible with the Orang Rimba wandering from one location to another. It must be stressed here that most policies that affect the Orang Rimba do not seek their active participation in the design and implementation of such policies. The government seems to have forgotten that the Orang Rimba's habitat is the forest. Instead, several programs seem to be underpinned by the desire to compensate the Orang Rimba for the loss of their forest, when actually it is irreplaceable in terms of their livelihood and existence.

As most tropical hunter-gatherers primarily depend on the forests, there is a significant correlation between forests and food security (Arnoldi et al. 2011, Rowland et al. 2016). Rowland et al. (2016) further express that there is a relation between healthy forests and healthy diets for forest-dependent people. Unfortunately, forests have been degraded over time, potentially leading to long-term negative impacts on nutrition for forest-dependent people (Ickowitz et al. 2016; Galway et al. 2018). The Orang Rimba, like other contemporary hunter-gatherers, face high vulnerabilities in food insecurity (Headland 1987, 1991; Dounias and Froment 2006) as result of forest degradation.

In the end, what the Orang Rimba really need is secure access to land to enable them to maintain their livelihoods. In this sense, the existence of the Bukit Duabelas National Park could be the right answer. But the park should not be tailored towards making the Orang Rimba inhabitants of a "museum", while instead it must provide an answer to the current crucial problem of providing right of access to land and halting continuous encroachment. There is no single development model that can serve as a 'one size fits all' remedy for the Orang Rimba. The most crucial challenge is how to guard the remaining forest in the park against contemporary pressures, both from the Orang Rimba themselves and other ethnic groups, as well as from the big corporations. If the Orang Rimba want to change and become farmers living a sedentary lifestyle, by adopting new ways of earning a living, such a choice should be left to them rather than being imposed from outside. The nation state and its various levels of government have the onus to guarantee the right of the Orang Rimba to make their own choices, whether or not they want to remain as hunter-gatherers or become farmers. Just like other hunter-gatherers, the Orang Rimba are opportunistic in terms of foraging for livelihoods, a process that largely depends on and is influenced by their fight for a better living.

I would like to argue that the "ambiguity" of the Orang Rimba in the present situation is a strategy to adapt to various changes in their lives: livelihoods, geographical landscape, forest degradation, as well as other social and cultural changes. The Orang Rimba are surviving thanks to their flexibility. Moreover, in the discussion of food security, my research shows that it is not beneficial to the Orang Rimba to be "pure" hunter-gatherers, since this will worsen their food security situation.

Better off or not, the transformation process towards becoming farmers or maintaining their identity as hunter-gatherers should be in the Orang Rimba's own hands. This includes the choice and decision to stay or get out of the forests (Levang et al. 2005), as they are capable of choosing and deciding their own fate, rather than following the recommendations from outsiders. The task of the government and other parties is to support the choices and decisions made by the Orang Rimba.

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Summary

The focus of this dissertation is on the food and livelihood security of the Orang Rimba, a hunter-gatherer people living in central Jambi (Sumatra, Indonesia). Living in small groups, they eke out a living by gathering forest products and hunting wildlife, which is sometimes combined with the adoption of commercial farming. Today, their total population is estimated at around 3,600 people, distributed over three locations: in the buffer zone of the Bukit Tigapuluh National Park in northern Jambi, outside the forest alongside the Sumatran highways in southern Jambi, and in and around the Bukit Duabelas National Park in central Jambi, where this study took place.

Jambi used to have vast stretches of rainforest, which suffered severe degradation due to rapid growth-focused development and poor forest management practices, which began in the 1970s and continue until this day. These practices promoted plantation crops (rubber, palm oil, and coffee, among others), increased accessibility through the construction of infrastructure, transmigrant settlements, logging (both legal and illegal), and slash-and-burn subsistence cultivation.

The advent of these changes has intensified pressure on Orang Rimba land and curtailed their mobile lifestyle, forcing them into an increasingly sedentary existence. Moreover, forest degradation and decimation of biodiversity have reduced the Orang Rimba's access to economic resources inside the forest. Consequently, the Orang Rimba have had to make culturally costly adjustments.

Central to my dissertation is the documentation and analysis of processes of change among contemporary Orang Rimba as hunter-gatherers, through the lens of food security. By closely examining their food consumption patterns and food procurement strategies, we can not only assess to what extent the Orang Rimba do or do not enjoy food security, but we can also pinpoint how processes of intense social and environmental change are reflected in their daily diets.

The main research question is: "*What are the patterns of food production and consumption among different Orang Rimba groups and how do these patterns relate to their food security?*" Additionally, this study answers the following sub-questions:

1. What do the Orang Rimba eat?
2. How do they obtain their food?
3. To what extent are the Orang Rimba food (in)secure?
4. How do they adjust their modes of livelihood under changing environmental and social conditions?

Most information was collected from the Orang Rimba through in-depth fieldwork, which took place during 21 months across 2012 through 2016. Additional information was gathered from other relevant stakeholders such as local government officials (at the

village, sub-district, district, and provincial level), local Non-Government Organizations, and outside experts on the Orang Rimba. Qualitative interviewing was combined with the collection of quantitative records on food consumption and procurement.

The core of the data consists of 2,520 food intake records, which were collected among six households from three Orang Rimba groups, namely in Sako Tulang, Terab and Air Hitam. In each site, the records covered a continuous period of three months and detailed the number and ingredients of each meal consumed by the various households. In addition, information was collected regarding the ways the meal ingredients were acquired, e.g., through hunting, fishing, gathering, cultivation, exchange between families or purchasing. Participatory observation further enabled me to closely observe food production and preparation techniques and social activities related to food production and consumption.

The three Orang Rimba groups considerably differ from each other in terms of their livelihood strategies, the ecological conditions and their proximity to Malay settlements. The Sako Tulang group lives on the border of secondary forest and a transmigration settlement. Their main livelihood consists of cash crop plantation farming (mostly rubber and to a lesser extent also oil palm) which they combine with hunting and gathering. Some of them have become middlemen and act as traders of these cash crops. The Terab group is the most mobile group. Having lost much of their original forest area to oil palm plantation development, they now largely depend on these logged-over plantation areas, where they make a living from hunting wild pig, intermittent financial handouts from plantation companies, and plantation labor. The Air Hitam group, finally, live in relatively intact forest inside the Bukit Duabelas National Park. They combine hunting and gathering with trading non-timber forest products and rubber tapping.

Overall, the records show that Orang Rimba diets are rich in carbohydrates and animal protein. While the meals consumed by all three groups quite consistently contain these components, the Terab group falls behind the other two groups in terms of the frequency in which they are present in their meals. Although Orang Rimba do not cultivate rice, this crop has become the number one source of carbohydrates among all groups. Rice is followed by cassava, which most often is grown by Orang Rimba themselves, or obtained through exchange with relatives. Wild tubers (which are dug up from the natural forest) are most consistently consumed by the Sako Tulang group, which is noteworthy given their heavy involvement in cash crop production.

Animal protein is mainly derived from hunting, fishing, and exchange with other households, and much less often from the market. However, there are notable differences between the three groups. Among the Sako Tulang and Air Hitam groups, freshwater fish is the main source of animal protein, which is both self-caught and bought on the market. In contrast, the Terab group mainly rely on lizards and wild pigs for their animal protein consumption. These pigs are mostly hunted in oil palm plantations, where the animals feed on fallen fruits.

In contrast to carbohydrates and animal protein, the records shows that vegetables and

fruits are rarely consumed during meals. Vegetables, mostly consisting of home-grown cassava leaves, are on average part of just over 2% of all meals. Only the Terab group ever eat fruits as (part of) their meals. Importantly, during the abundant fruiting season this group periodically over-consumes fruits, which leads to gastro-intestinal issues.

In principle, Orang Rimba households strive to eat three meals a day. The food intake records show that both the Sako Tulang and Air Hitam groups do quite well in this respect. The sampled households in these groups consumed 97% and 95% of all regular meals respectively, implying they skipped between 3-5% of all the meals that could have potentially been consumed during the 3-month period of observation. The picture is rather different for the Terab group. The sampled households in that group consumed 85% of all regular meals, which means that they had to forego around 15% of potential meals during the observation period.

Combining these analyses with insights on the context in which the three groups procure their food and income, this dissertation shows that the Terab group is most vulnerable in terms of food and livelihood security. They lag behind the other two groups with respect to carbohydrate and animal protein consumption, and they skip meals three times as often. Being a highly mobile group moving around oil palm plantations and secondary forest, they depend on a relatively confined and degraded environment in which they are confronted with limited availability of food and lack of safe drinking water. These factors contribute to malnutrition and health issues, which in 2015 culminated in 15 people dying of hunger.

In contrast to the Terab group, the Air Hitam group, living inside the Bukit Duabelas National Park, still has continued access to relatively intact forest. Being able to obtain most of their food from that forest, this group is least dependent on cash. However, they do rely on their earnings from rubber tapping for purchasing rice, which is reflected in periodic rice shortages, especially in the dry season.

The Sako Tulang group are the most cash-dependent among the three groups, their main livelihood being rubber tapping and trading. Such cash crop farming is successfully combined with hunting and gathering activities in the adjacent secondary forest, which together provide this group with a relatively stable income. Nonetheless, they too, face food and income scarcity during the dry season.

Food-sharing is the most important coping mechanism to prevent and mitigate food shortages among all three groups. This is an important trait of hunter-gatherer peoples in general, and it applies most strongly to food that is procured through hunting, fishing and gathering. Purchased rice too, however, may be shared between close relatives. Food sharing is practiced across relatively large distances and is surrounded by a set of specific cultural rules and taboos.

Despite inter-group variation, overall, the Orang Rimba face high vulnerability in terms of food and livelihood security. Their main asset, the natural forest, is no longer large

and abundant enough to cater to their food needs year-round and it continues to shrink rapidly. This is because swathes of natural forest are signed away by the government to both private and state-owned rubber and oil palm plantations, logging concessions, infrastructure development, and transmigration projects, as part of the Indonesian government's economic policy. Moreover, in their trade of forest and plantation products, most Orang Rimba continue to be highly dependent on asymmetrical trade and labor relationships with external middle-men and plantation companies, while their increasing dependency on cash further exacerbates their vulnerability as price volatility results in periods of scarcity and hardship.

The dissertation is structured as follows.

Chapter I discusses the conceptual background used, including reflections on the concepts of hunter-gatherers, food, and livelihood security. It also includes a brief discussion of the Orang Rimba literature. In addition, it presents the methodology of the research and the outline of the dissertation.

Chapter II discusses the setting of my research. This includes a discussion of the interconnection of the Orang Rimba with the wider world, the lives of the Orang Rimba in more specific ways, especially in terms of local knowledge and livelihood, and a discussion of the Bukit Duabelas National Park. This chapter explains how the interaction of various factors and actors has shaped the lives of the Orang Rimba. This includes government policy and the interventions by the non-state actors such as NGOs, media, and other communities. These actors and factors have a significant influence on various changes faced by the Orang Rimba.

Chapters III, IV, and V are dedicated to the presentation of the extensive findings based on the fieldwork conducted in the three groups: the Sako Tulang group, the Terab group, and the Air Hitam group. The results of the daily food intake records and the interview data on the Orang Rimba's knowledge of edible wild plants and animals in each location are also carefully investigated in these three chapters.

Chapter VI provides a comparative analysis of the data from the three groups and a general conclusion. It argues that despite their diets being relatively rich in carbohydrates and animal protein, all three groups face food insecurity in different ways and at different levels. The continued decline of the natural forests on which Orang Rimba livelihoods and culture depend, the lack of secure access to land, the increased dependency on the market and associated exposure to price volatility, and the unrelenting government efforts to make the Orang Rimba part of the national modernization project, work against their food and livelihood security. As is the case for other hunter-gatherer peoples, it is vital for the Orang Rimba that future interventions depart from *their* understanding of what food security and progress mean.

Samenvatting

De focus van dit proefschrift ligt op de voedsel- en bestaanszekerheid van de Orang Rimba, een volk van jagers en verzamelaars dat in Jambi (Sumatra, Indonesië) woont. Ze leven in kleine groepen en voorzien in hun onderhoud door middel van het verzamelen van bosproducten en het jagen op wilde dieren. Soms combineren ze dit met het verbouwen van *cash crops* (commerciële gewassen). Hun totale bevolkingsaantal wordt geschat op ongeveer 3.600 mensen, verspreid over drie locaties: in de bufferzone van Nationaal Park Bukit Tigapuluh, het gebied buiten het bos langs de Trans Sumatra Highway in zuid Jambi, en in en rond Nationaal Park Bukit Duabelas in centraal Jambi, waar deze studie heeft plaats gevonden.

Jambi had oorspronkelijk een uitgestrekt regenwoud, dat sterk is aangetast door het proces van ontwikkeling dat gericht was op snelle groei en door slecht bosbeheer, dat begon in de jaren '70 van de vorige eeuw en dat tot op de dag van vandaag is doorgegaan. Deze praktijken bevorderden de verbouw van plantagegewassen (onder andere rubber, palmolie en koffie), grotere toegankelijkheid door middel van de aanleg van infrastructuur, nederzettingen voor transmigranten, houtkap (zowel legaal als illegaal) en zelfvoorzienende zwerflandbouw.
De komst van deze veranderingen heeft de druk op het land van de Orang Rimba geïntensiveerd en hun mobiele levensstijl beperkt, waardoor ze gedwongen werden tot een meer sedentair bestaan. Bovendien hebben de achteruitgang van het bos en de decimering van de biodiversiteit de toegang tot de economische hulpbronnen in het bos beperkt. Als gevolg hiervan moesten de Orang Rimba in cultureel opzicht grote aanpassingen doen.

Centraal in mijn dissertatie staan de documentatie en de analyse van veranderingsprocessen onder de huidige Orang Rimba als jagers en verzamelaars door de lens van voedselzekerheid. Door nauwgezet hun strategieën en patronen van voedselconsumptie en voedselproductie te onderzoeken, kunnen we niet alleen beoordelen in welke mate de Orang Rimba wel of niet voedselzekerheid kennen, maar kunnen we ook beoordelen hoe processen van grote sociale veranderingen en veranderingen in het milieu in hun dagelijkse dieet hun neerslag vinden.

De belangrijkste onderzoeksvraag is: '*Wat zijn de patronen van voedselproductie en – consumptie onder verschillende Orang Rimba groepen en hoe zijn deze patronen gerelateerd aan hun voedselzekerheid?*' In aanvulling hierop beantwoordt deze studie ook de volgende subvragen:
1. Wat eten de Orang Rimba?
2. Hoe verwerven zij hun voedsel?
3. In welke mate kennen de Orang Rimba voedsel(on)zekerheid?
4. Hoe passen zij hun bestaanswijzen aan aan de veranderende milieu- en sociale omstandigheden?

De meeste informatie werd onder de Orang Rimba verzameld door middel van intensief veldwerk dat gedurende 21 maanden tussen 2012 en 2016 plaats vond. Aanvullende gegevens werden verzameld door middel van gesprekken met andere relevante informanten zoals ambtenaren (op dorps-, subdistricts-, districts- en provinciaal niveau), lokale NGOs en externe Orang Rimba deskundigen. Kwalitatieve interviews werden gecombineerd met het verzamelen van kwantitatieve gegevens van voedselconsumptie en –productie.

De kern van de informatie bestaat uit gegevens van in totaal 2.520 maaltijden, die onder zes huishoudens van drie Orang Rimba groepen werden verzameld, namelijk in Sako Tulang, Terab en Air Hitam. Op iedere locatie besloeg de verzameling van deze gegevens een aaneengesloten periode van drie maanden. In de verslagen werden het aantal maaltijden en de ingrediënten van alle maaltijden die door de verschillende huishoudens werden geconsumeerd, genoteerd. In aanvulling werd informatie verzameld met betrekking tot de wijzen waarop de ingrediënten van de maaltijd waren verkregen, dat wil zeggen door middel van jacht, visserij, verzamelen, verbouw, uitwisseling tussen families of door aankoop. Participerende observatie stelde mij in staat om de voedselproductie en de technieken waarop het voedsel werd klaargemaakt, en de sociale activiteiten verbonden met voedselproductie en –consumptie te observeren.

De drie Orang Rimba groepen verschillen aanzienlijk van elkaar in termen van hun bestaanswijzen, de ecologische omstandigheden en de nabijheid tot de nederzettingen van de omringende Maleise bevolking. De Sako Tulang groep leeft op de grens van secundair bos en een nederzetting van transmigranten. Hun belangrijkste bestaansmiddel bestaat uit het verbouwen van een *cash crop* (meestal rubber en in mindere mate ook palmolie) dat ze combineren met jagen en verzamelen. Enkele van hen zijn ook tussenpersoon geworden en zij treden op als handelaar van deze *cash crops*. De Terab group is de meest mobiele groep. Omdat zij het grootste gedeelte van hun oorspronkelijke bosgebied verloren hebben aan de ontwikkeling van een oliepalmplantage, zijn ze nu afhankelijk geworden van deze kaalgekapte plantagegebieden waarin ze een bestaan leiden met het jagen op wilde zwijnen, giften die ze zo nu en dan ontvangen van de plantagemaatschappijen en loonarbeid. De Air Hitam groep tenslotte leeft in relatief goed bos binnen Nationaal Park Buklit Duabelas. Zij combineren jagen en verzamelen met de verkoop van de bosbijproducten en het tappen van rubber.

In het algemeen tonen de verslagen van de maaltijden van de Orang Rimba aan dat ze rijk zijn aan koolhydraten en dierlijke proteïne. Hoewel de geconsumeerde maaltijden van alle drie de groepen vrij consistent deze componenten bevatten, is de frequentie bij de Terab groep lager dan bij de andere twee groepen. Hoewel de Orang Rimba geen rijst verbouwen, is dit gewas de belangrijkste bron van koolhydraten onder alle groepen. Rijst wordt gevolgd door cassave dat door de Orang Rimba het meest verbouwd wordt, of door middel van ruil met verwanten wordt verkregen. Wilde knollen, die worden opgegraven in natuurlijk bos, worden het meest geconsumeerd door de Sako Tulang groep, wat opmerkelijk is gezien hun grote betrokkenheid bij de productie van *cash crops*. Dierlijke proteïne wordt vooral verkregen door middel van jagen, vissen en uitwisseling

met andere huishouden, en minder vaak via de markt. Er zijn echter opvallende verschillen tussen de drie groepen. Bij de Sako Tulang en de Air Hitam groepen is zoetwater vis de belangrijkste bron van dierlijke proteïne, zowel door middel van eigen vangst als via aankoop op de markt. Consumptie van dierlijke proteïne door de Terab groep daarentegen is vooral mogelijk vanwege de jacht op hagedissen en wilde zwijnen. Deze zwijnen worden met name bejaagd in de oliepalmplantages waar ze zich tegoed doen aan de gevallen vruchten.

In contrast met koolhydraten en dierlijke proteïne, tonen de verslagen aan dat groenten en vruchten zelden worden geconsumeerd bij maaltijden. Groenten, die vooral bestaan uit de bladeren van cassave die in eigen tuinen wordt geteeld, komen gemiddeld slechts in ruim 2% van alle maaltijden voor. Alleen de Terab groep eet vruchten als deel van hun maaltijden. Belangrijk is om te vermelden dat onder deze groep de fruitconsumptie gedurende het overvloedige vruchtenseizoen zo groot is, dat het leidt tot darmklachten. In principe streven de Orang Rimba huishoudens ernaar om drie maaltijden per dag te nuttigen. De verslagen van de voedselinname geven aan dat de Sako Tulang en Air Hitam groepen het in dit opzicht goed doen. De geselecteerde huishoudens in deze groepen consumeerden respectievelijk 97% en 95% van alle reguliere maaltijden, hetgeen inhoudt dat ze 3-5% van alle maaltijden die ze potentieel geconsumeerd zouden kunnen, hebben oversloegen in de observatieperiode van drie maanden. Dit beeld ligt anders bij de Terab groep. De geselecteerde huishoudens in die groep consumeerden 85% van alle reguliere maaltijden, hetgeen betekent dat zij rond 15% van alle potentiële maaltijden tijdens de observatieperiode oversloegen.

Op basis van deze analyse en in combinatie met de context waarin de drie groepen hun voedsel produceren en hun inkomen verwerven, toont dit onderzoek aan dat de Terab groep het meest kwetsbaar is termen van voedsel- en bestaanszekerheid. Deze groep komt na de twee andere groepen wat betreft de consumptie van koolhydraten en dierlijke proteïne, en slaat drie keer zoveel maaltijden over. Omdat het een zeer mobiele groep is die zich beweegt in de oliepalmplantages en het secundaire bos, zijn de groepsleden afhankelijk van een betrekkelijk beperkte en gedegradeerde omgeving waarin zij geconfronteerd worden met beperkte beschikbaarheid van voedsel en een gebrek aan veilig drinkwater. Deze factoren dragen bij aan ondervoeding en gezondheidsproblemen, die in 2015 uitmondden in 15 sterfgevallen vanwege honger.

In tegenstelling tot de Terab groep, heeft de Air Hitam groep die in Nationaal Park Bukit Duabelas leeft, nog steeds toegang tot relatief intact bos. Omdat zij in staat zijn het grootste deel van het voedsel uit te bos te halen, is deze groep het minst van afhankelijk van geld. Voor het kopen van rijst zijn zij echter wel afhankelijk van het tappen van rubber, dat tot uitdrukking komt tijdens de periodieke rijsttekorten, vooral in het droge seizoen. Van de drie groepen is de Sako Tulang groep het meest afhankelijk van geld en hun belangrijkste middel van bestaan is het tappen van rubber en de handel in dit product. Het verbouwen van deze *cash crop* wordt op succesvolle manier gecombineerd met jagen en verzamelen in het nabijgelegen secundaire bos waardoor deze groep een relatief stabiel inkomen wordt verkregen. Desondanks ervaren zij gedurende het droge seizoen schaarste

aan voedsel en inkomen. Voedsel wordt vaak gedeeld over grote afstanden en deze gewoonte gaat gepaard met een aantal specifieke culturele regels en taboes.
Ondanks de variatie tussen de groepen, ervaren de Orang Rimba over het algemeen een hoge mate van kwetsbaarheid in termen van voedsel- en bestaanszekerheid. Hun belangrijkste bezit, het natuurlijke bos, is niet langer wijds en overvloedig genoeg om in hun voedselbehoeften gedurende het hele jaar te voorzien en het wordt nog steeds snel minder. Dit komt omdat, als onderdeel van het Indonesische economische beleid, delen van het natuurlijke bos worden uitgegeven aan particuliere of staatsbedrijven voor de ontwikkeling van rubber- en oliepalmplantages, houtkapconcessies, infrastructuur en transmigratieprojecten. Bovendien blijven de meeste Orang Rimba in hun handel van bos- en plantageproducten sterk afhankelijk van de asymmetrische handels- en arbeidsrelaties met externe tussenpersonen en plantagebedrijven, terwijl hun toenemende afhankelijkheid van geld hun kwetsbaarheid versterkt omdat prijsfluctuaties resulteren in periodes van schaarste en ontbering.

De dissertatie is als volgt opgebouwd.
Hoofdstuk 1 behandelt de conceptuele achtergrond, inclusief reflecties op de centrale begrippen van jagers en verzamelaars, en voedsel- en bestaanszekerheid. Het geeft ook een korte discussie van de literatuur over de Orang Rimba. Verder bespreekt het de methodologie van het onderzoek en opbouw van de dissertatie.
Hoofdstuk II behandelt de context van mijn onderzoek. Het gaat nader in op de relaties van de Orang Rimba met de buitenwereld, specifieke aspecten van het leven van de Orang Rimba, met name in termen van hun lokale kennis en bestaanswijzen, en een bespreking van Nationaal Park Bukit Duabelas. Dit hoofdstuk beschrijft hoe de interactie tussen verschillende factoren en actoren het leven van de Orang Rimba heeft gevormd. Hieronder vallen het overheidsbeleid en de interventies van andere actoren zoals de NGOs, media, en andere gemeenschappen. Deze actoren en factoren hebben een grote invloed op de verschillende soorten veranderingen die de Orang Rimba hebben ondergaan.
De hoofdstukken III, IV en V zijn gewijd aan de presentatie van de uitgebreide gegevens die gebaseerd zijn op het veldwerk dat onder de drie groepen is verricht: de Sako Tulang groep, de Terab groep en de Air Hitam groep. De resultaten van de dagelijkse voedselinname en de interviewgegevens over de kennis van de Orang Rimba met betrekking tot de eetbare wilde planten en dieren in ieder locatie worden in deze drie hoofdstukken besproken.
Hoofstuk VI geeft de comparatieve analyse van de gegevens van de drie groepen en een algemene conclusie. Het betoogt dat ondanks dat hun diëten relatief rijk zijn aan koolhydraten en dierlijke proteïne, alle drie de groepen op verschillende manieren en op verschillende niveaus te maken hebben met voedselonzekerheid. De voortdurende achteruitgang van de natuurlijke bossen waarvan de Orang Rimba afhankelijk zijn voor hun bestaanswijzen en hun cultuur, het gebrek aan verzekerde toegang tot land, de toegenomen afhankelijkheid van de markt en de daaraan gekoppelde blootstelling aan prijsfluctuaties, en de onophoudelijke pogingen van de overheid om de Orang Rimba deel te laten worden van het nationale moderniseringsproject, hebben een negatieve invloed op hun voedsel- en bestaanszekerheid. Net als voor andere jagers en verzamelaarsvolken, is het voor de Orang Rimba van levensbelang dat toekomstige interventies uitgaan van hun begrip van wat voedselzekerheid en vooruitgang betekenen.

Ringkasan

Ketahanan Pangan bagi Orang Rimba di Jambi

Proses Transformasi Masyarakat Pemburu Peramu Kontemporer di Indonesia

Disertasi ini membahas tentang ketahanan pangan bagi Orang Rimba. Selain topik ketahanan pangan, topik penting lainnya yang terkait erat adalah tentang sumber penghidupan bagi Orang Rimba. Orang Rimba merupakan salah satu masyarakat pemburu peramu yang tinggal di dalam wilayah hutan di Jambi Sumatra, Indonesia. Seluruh aspek kehidupan mereka sangat tergantung dan erat sekali dengan hutan. Mereka hidup secara berkelompok dalam kelompok-kelompok kecil dengan rata-rata 12 kepala keluarga di tiap kelompok. Beberapa kelompok mempunyai jumlah populasi yang lebih kecil atau lebih besar, tergantung lokasi dan kondisi geografis masing-masing kelompok. Saat ini mereka masih mempertahankan pola berburu, meramu, dan mengumpulkan hasil hutan sebagai sumber utama penghidupan mereka. Selain itu, mereka juga mulai mengembangkan pertanian, terutama untuk tanaman karet dan kelapa sawit. Jumlah populasi Orang Rimba saat ini diperkirakan sekitar 3.600 jiwa dan tersebar di tiga lokasi yang berbeda, yaitu di sebelah utara Jambi (Taman Nasional Bukit Tigapuluh), di luar wilayah taman nasional (sepanjang jalan lintas Sumatra), dan di bagian tengah Jambi (di dalam dan sekitar Taman Nasional Bukit Duabelas). Penelitian ini menitikberatkan fokus pada lokasi ketiga, yaitu di dalam Taman Nasional Bukit Duabelas dan di sekitarnya.

Jambi merupakan salah satu wilayah di Indonesia yang dulunya mempunyai hamparan hutan tropis yang sangat luas. Namun, seiring perjalanan waktu, hutan tropis yang menjadi paru-paru dunia lambat laun mengalami degradasi secara terus menerus. Penurunan tutupan lahan hutan di Jambi dimulai sejak awal tahun 1970an hingga saat ini, di mana hutan tropis berlahan-lahan telah dikonversi menjadi area perkebunan (coklat, karet, dan kelapa sawit), infrastruktur jalan raya, area pemukiman transmigrasi, pembalakan hutan, dan juga peladangan berpindah menggunakan teknik pembakaran.

Berbagai konversi dan perubahan lanskap hutan tersebut di atas telah mengubah kehidupan dan penghidupan Orang Rimba, yang sayangnya ke arah yang tidak lebih baik. Hutan yang semakin menyempit memberi dampak yang cukup signifikan terhadap struktur sosial, budaya, dan ekonomi mereka. Lebih jauh, kerusakan hutan secara berkesinambungan telah mengikis keanekaragaman hayati yang menjadi salah satu tumpuan utama penghidupan Orang Rimba. Orang Rimba harus beradaptasi baik secara sosial, budaya, dan ekonomi untuk menghadapi berbagai perubahan tersebut.

Disertasi ini mencoba untuk mendokumentasikan berbagai proses-proses perubahan kehidupan dan penghidupan Orang Rimba, melalui kaca mata ketahanan pangan. Tema ketahanan pangan diharapkan dapat memotret proses transformasi Orang Rimba melalui pola-pola produksi dan konsumsi pangan mereka, yang dapat menuntun pembaca untuk memahami lebih dalam berbagai perubahan sosial dan lingkungan yang mereka alami

melalui pola pangan sehari-hari Orang Rimba.

Pertanyaan utama yang ingin dijawab pada disertasi ini adalah: “Apa saja pola-pola produksi dan konsumsi kelompok-kelompok Orang Rimba dan bagaimana pola-pola tersebut berkaitan dengan ketahanan pangan?” Selain pertanyaan utama, disertasi ini juga mempunyai empat sub pertanyaan, yaitu:

1. Apa saja yang dikonsumsi oleh Orang Rimba?
2. Bagaimana mereka mendapatkan pangan mereka?
3. Sampai sejauh mana Orang Rimba berada pada posisi tidak tahan pangan?
4. Bagaimana mereka beradaptasi dengan berbagai perubahan sosial dan lingkungan untuk mencukupi sumber-sumber penghidupan mereka?

Penelitian ini menggunakan kombinasi teknik pengumpulan data, yaitu primer dan sekunder. Pengumpulan data dan studi lapangan dilakukan selama 21 bulan, yang tersebar pada periode tahun 2012 hingga 2016. Data sekunder dikumpulkan dari berbagai sumber-sumber, yaitu dari pemerintah daerah (di tingkat desa, kecamatan, kabupaten, dan provinsi); lembaga swadaya masyarakat (LSM), dan para ahli/akademisi yang menaruh perhatian terhadap studi Orang Rimba. Sementara itu, data primer pangan dikumpulkan dari kombinasi pengumpulan data kuantitatif asupan pangan harian pada kurun waktu tertentu, serta produksi pangan.

Data asupan pangan harian yang dikumpulkan mencapai 2.520 rekaman data, yang berasal dari enam rumah tangga dari tiga kelompok yang berbeda. Tiga kelompok ini adalah kelompok Sako Tulang, Terab, dan Air Hitam. Di setiap kelompok, data asupan pangan harian dikumpulkan selama dua hingga enam bulan. Selain data konsumsi pangan, penelitian ini juga mengumpulkan data-data yang terkait dengan sistem mode produksi pangan Orang Rimba, baik melalui berburu, mencari ikan, mengumpulkan komoditi pangan dari hutan, budidaya kebun di sekitar tempat tinggal, berbagi dengan sesama komunitas di dalam grup maupun di luar grup, dan dari membeli.

Pengumpulan data primer dan sekunder di atas juga dilengkapi dengan observasi partisipatoris yang dilakukan selama kurun waktu penelitian lapangan. Berbagai teknik yang digunakan tersebut diharapkan mampu memberikan gambaran komprehensif ketahanan pangan Orang Rimba yang diteliti.

Pemilihan tiga kelompok Orang Rimba dilakukan dengan pertimbangan untuk mengetahui berbagai diversifikasi pola-pola sosial, ekonomi, dan budaya Orang Rimba; tantangan yang mereka hadapi; serta bagaimana strategi yang mereka lakukan untuk mengatasi berbagai tekanan yang dihadapi, terutama dalam mencapai ketahanan pangan dan mempertahankan sumber penghidupan mereka.

Kelompok Sako Tulang tinggal di hutan sekunder di sebelah barat Taman Nasional Bukit Duabelas (TNBD). Mereka hidup berdampingan dengan para transmigran yang berasal dari Pulau Jawa dan Orang Melayu. Sumber penghidupan mereka berasal dari pengelolaan perkebunan karet dan kelapa sawit, yang dikombinasikan dengan berburu

dan mengumpulkan bahan pangan dari hutan. Beberapa orang di antara mereka terlibat pada aktivitas perdagangan karet dan sawit dengan menjadi pengepul atau *toke*.

Kelompok Terab adalah kelompok yang paling aktif berpindah-pindah dari satu lokasi ke lokasi yang lain. Setelah kehilangan sebagian besar wilayah hutannya yang dikonversi menjadi perkebunan kelapa sawit, saat ini kelompok Terab tinggal di area-area perkebunan kelapa sawit milik perusahaan kelapa sawit. Untuk memenuhi kebutuhan sehari-hari, mereka berburu babi hutan, menjadi pekerja sambilan bagi perusahaan sawit, dan menjual jasa di perkebunan milik masyarakat.

Kelompok terakhir adalah kelompok Air Hitam. Mereka tinggal di dalam kawasan Taman Nasional Bukit Duabelas yang terbilang masih mempunyai hutan yang cukup bagus. Mereka mengandalkan berburu dan mengumpulkan hasil hutan sebagai sumber mata pencaharian utamanya sekaligus untuk memenuhi kebutuhan pangan. Selain itu, mereka juga mengupayakan perkebunan karet skala kecil untuk memenuhi kebutuhan sehari-hari.

Secara umum dapat dikatakan bahwa asupan pangan Orang Rimba didominasi oleh karbohidrat dan protein hewani. Hasil penelitian menunjukkan bahwa ketiga kelompok mempunyai pola makan yang hampir sama dari sis asupan pangan. Namun jika dibandingkan dari ketiga kelompok, kelompok Terab merupakan kelompok dengan frekuensi asupan pangan yang lebih rendah dibanding kedua kelompok lainnya. Meskipun Orang Rimba tidak membudidayakan padi, namun beras merupakan sumber karbohidrat utama bagi mereka. Selain beras, asupan karbohidrat diperoleh dari singkong yang sebagian besar Orang Rimba memiliki tanaman tersebut di kebun di sekitar pemukiman mereka. Terkadang, mereka juga membagi-bagikan singkong ini kepada anggota keluarga yang lain jika mengalami persediaan yang berlebih di kebun mereka. Khusus untuk kelompok Sako Tulang, temuan yang menarik justru ditunjukkan dari pola pangan mereka yang juga mengonsumsi umbi-umbi liar lainnya yang tumbuh di hutan sebagai sumber karbohidrat. Meskipun mereka adalah kelompok yang paling terpapar dengan pertanian monokultur, namun mereka tidak meninggalkan asupan karbohidrat yang berasal dari umbi-umbi liar dari dalam hutan.

Protein hewani berasal dari aktivitas berburu, menangkap ikan di sungai, dan pertukaran dengan rumah tangga atau kelompok lain. Meskipun ada sedikit porsi di mana pada saat-saat tertentu Orang Rimba juga membelinya di pasar. Dari tiga kelompok yang diteliti, ada beberapa variasi yang dapat disampaikan dalam hal asupan protein hewani. Kelompok Sako Tulang dan Air Hitam mengonsumsi mayoritas protein hewani dari menangkap ikan di sungai dan membeli di pasar. Sementara itu, kelompok Terab mengonsumsi lebih banyak biawak dan babi hutan untuk kecukupan protein hewani mereka. Seperti diketahui, babi hutan memang banyak ditemui di wilayah-wilayah perkebunan kelapa sawit karena babi hutan menyukai buah sawit yang jatuh di tanah.

Penelitian ini juga menunjukkan bahwa konsumsi sayur dan buah sangat sedikit bagi Orang Rimba, hal ini paling tidak ditunjukkan dari rekaman data asupan pangan harian. Sayur mayur yang paling sering dikonsumsi adalah daun singkong yang secara rata-rata hanya

berkisar antara 2% dari seluruh asupan pangan Orang Rimba. Data rekaman asupan harian pangan juga menunjukkan bahwa kelompok Terab adalah satu-satunya kelompok yang mengonsumsi buah-buahan selama kurun waktu pengumpulan data. Namun demikian, perlu ditekankan di sini adalah bukan berarti Orang Rimba jarang sekali mengonsumsi buah-buahan, karena pada saat musim buah, asupan konsumsi buah sangat tinggi sekali bagi Orang Rimba di semua kelompok. Hal ini sering menimbulkan masalah pencernaan ketika musim buah-buahan datang.

Pada dasarnya Orang Rimba mempunyai waktu makan yang rutin setiap hari sebanyak tiga kali. Data rekaman asupan pangan harian menunjukkan bahwa kelompok Sako Tulang dan Air Hitam mempunyai frekuensi makan yang cukup baik dengan frekuensi 97% dan 95%. Artinya mereka hanya melewati makan atau tidak makan sebanyak 3-5% dari total rata-rata tiga bulan periode rekaman pengumpulan data. Kelompok Terab mempunyai tren yang berbeda dengan kedua kelompok sebelumnya. Frekuensi makan selama proses pengumpulan data berlangsung sebesar 85% atau mereka melewati makan atau tidak makan sebanyak 15% dari pangan yang seharusnya dikonsumsi.

Penelitian ini menunjukkan bahwa kelompok Terab merupakan kelompok yang paling rentan dilihat dari aspek ketahanan pangan dan ketahanan sumber penghidupan. Dari sisi asupan pangan, kelompok ini mempunyai asupan karbohidrat dan protein hewani yang lebih rendah dibandingkan dua kelompok lainnya. Mereka juga tidak rutin mengonsumsi pangan secara reguler sebanyak tiga kali sehari. Pola hidup yang terlalu sering berpindah-pindah di area perkebunan kelapa sawit juga menambah kompleksitas masalah kesehatan mereka, karena mereka tidak mempunyai area perburuan yang dapat memenuhi kebutuhan pangan harian. Selain itu, mereka juga mengalami berbagai masalah kesehatan yang bersumber dari konsumsi air yang tidak layak minum yang berada di area perkebunan. Berbagai kombinasi persoalan ini mencapai puncaknya pada tahun 2015 di mana sebanyak 15 orang meninggal dunia karena mengalami masalah kesehatan, malnutrisi, dan kelaparan.

Kelompok Air Hitam di sisi lain, lebih diuntungkan karena mereka masih tinggal di dalam area Taman Nasional Bukit Duabelas, di mana hutan masih dapat diandalkan untuk memenuhi kebutuhan pangan sehari-hari. Mereka mempunyai ketergantungan yang rendah terhadap uang tunai dan pasar. Kondisi ini bukan berarti bahwa kelompok Air Hitam tidak membutuhkan uang tunai sama sekali dalam kehidupan sehari-hari mereka. Mereka masih tetap membutuhkan uang tunai yang diperoleh dari hasil perkebunan karet untuk membeli beras dan kebutuhan pokok lainnya terutama di saat-saat krisis (*remayo*) yang biasanya terjadi di musim kemarau.

Dalam hal ketergantungan terhadap uang tunai, dapat dikatakan bahwa kelompok Sako Tulang merupakan kelompok yang paling banyak bertransaksi menggunakan uang tunai dalam kehidupan sehari-hari. Hal ini karena mereka sangat aktif berpartisipasi pada sistem perdagangan karet, baik sebagai petani karet maupun sebagai pengepul (*toke*). Yang menarik dari kelompok ini adalah meskipun mereka sudah sangat aktif bertransaksi menggunakan uang tunai, mereka masih juga aktif melakukan kegiatan perburuan dan

pengumpulan hasil-hasil hutan untuk memenuhi kebutuhan pangan sehari-hari. Namun demikian, mereka juga mengalami saat-saat krisis berupa kekurangan pangan dan uang tunai di saat-saat tertentu seperti musim kemarau.

Orang Rimba mempunyai strategi dalam mengatasi persoalan kekurangan pangan. Hal ini jelas terlihat pada tiga kelompok Orang Rimba yang mempunyai mekanisme konsep berbagi hingga saat ini. Konsep ini menjadi ciri khas dari masyarakat pemburu peramu secara umum dan diaplikasikan melalui aktivitas berburu, mencari ikan, dan mengumpulkan hasil-hasil hutan. Pada konteks saat ini, berbagi beras menjadi hal yang juga menjadi kebiasaan umum yang dilakukan di dalam kelompok maupun antar kelompok. Berbagi makanan merupakan sebuah praktik yang umum dilakukan dengan memperhatikan batasan-batasan budaya dan tabu yang cukup khas bagi masyarakat pemburu peramu.

Terlepas dari berbagai variasi yang terjadi pada tiga kelompok Orang Rimba tersebut di atas, secara umum Orang Rimba menghadapi kerentanan dari sisi ketahanan pangan dan sumber penghidupan. Aset utama mereka, yaitu hutan, tidak mampu mencukupi kebutuhan pangan mereka untuk durasi satu tahun penuh. Kondisi ini semakin bertambah buruk setiap tahunnya. Kebijakan-kebijakan pemerintah di bidang konversi lahan menjadi perkebunan karet dan kelapa sawit, konsesi hutan, pembangunan infrastruktur, dan proyek transmigrasi merupakan faktor-faktor yang memperparah kerusakan hutan. Sementara itu, partisipasi Orang Rimba dalam bidang ekonomi modern seperti perdagangan dan menjadi buruh perkebunan juga mengalami relasi yang asimetris dengan tetangga kelompok etnis mereka. Ketergantungan terhadap uang tunai menambah kerentanan mereka karena mereka tidak mempunyai kontrol terhadap volatilitas harga komoditi-komoditi perkebunan, terutama karet, yang justru dapat memperparah kondisi perekonomian dan ketahanan pangan mereka.

Disertasi ini berisi enam bab yang disusun sebagai berikut.

Bab I membahas tentang latar belakang penelitian, termasuk bahasan tentang masyarakat pemburu peramu, ketahanan pangan, dan sumber penghidupan. Bab I juga membahas latar belakang Orang Rimba berdasarkan studi literatur. Selain itu, bab ini juga menampilkan metodologi yang digunakan dalam proses penelitian, serta susunan disertasi.

Bab II membahas tentang seting penelitian. Beberapa pokok bahasan yang dimasukkan di dalam Bab II adalah topik tentang interkoneksitas Orang Rimba dengan para pihak lainnya di luar mereka. Selain itu, bab ini juga membahas secara lebih mendalam tentang kehidupan Orang Rimba dari sudut pandang etnografi. Hal ini termasuk pengetahuan lokal dan sumber penghidupan mereka. Diskusi tentang Taman Nasional Bukit Duabelas juga dimasukkan dalam bab ini. Lebih jauh bab ini membahas tentang interaksi Orang Rimba dengan berbagai aktor dan juga faktor-faktor yang mempengaruhi perubahan yang terjadi dalam kehidupan Orang Rimba. Termasuk juga peran berbagai kebijakan pemerintah, intervensi lembaga non pemerintah seperti lembaga swadaya masyarakat, media, dan juga komunitas lain di luar Orang Rimba.

Bab III sampai V didedikasikan untuk bahasan tiga kelompok Orang Rimba yang diteliti, yaitu kelompok Sako Tulang, Terab, dan Air Hitam. Beberapa aspek yang dibahas dalam ketiga bab ini adalah hasil temuan studi lapangan terutama untuk temuan data asupan pangan harian serta hasil wawancara yang terkait dengan data-data pendukung pangan lainnya termasuk pengetahuan Orang Rimba terhadap berbagai tanaman dan binatang yang dapat dikonsumsi.

Bab VI menampilkan hasil analisis komparatif dari tiga kelompok Orang Rimba dan juga kesimpulan. Disertasi ini menunjukkan bahwa meskipun Orang Rimba secara kuantitas mempunyai kecukupan asupan karbohidrat dan protein hewani, namun secara umum dapat dikatakan bahwa ketahanan pangan ketiga kelompok Orang Rimba yang diteliti cukup rentan. Kerentanan ini cukup bervariasi dari masing-masing kelompok yang disebabkan oleh beberapa faktor. Faktor utama yang menyebabkan ketahanan pangan yang lemah bagi Orang Rimba adalah semakin tingginya tingkat degradasi hutan yang menjadi pusat kehidupan dan sumber penghidupan Orang Rimba. Keterbatasan akses mereka terhadap lahan, semakin meningkatnya ketergantungan terhadap pasar, ketidakmampuan menghadapi volatilitas harga-harga komoditi, dan beberapa kebijakan pemerintah yang tidak mendukung pola hidup Orang Rimba merupakan faktor-faktor krusial yang melemahkan ketahanan pangan dan sumber penghidupan Orang Rimba. Saat ini yang paling krusial adalah adanya kesetaraan pemahaman bagi semua pihak bahwa intervensi yang nanti akan diambil bagi keberlangsungan ketahanan pangan dan penghidupan Orang Rimba seharusnya juga mempertimbangkan pemahaman dan budaya Orang Rimba itu sendiri. Jika hal ini bisa dilakukan, persoalan ketahanan pangan dan juga sumber penghidupan bagi masyarakat pemburu peramu secara umum dapat sejalan dengan proses pembangunan yang diharapkan oleh semua pihak.

APPENDIX 1. Detailed breakdown of food intake records in Sako Tulang

Table 38. Composition of breakfast of two households, Sako Tulang

Type of food	Frequency		Percentage		Percentage (Average)
	HH 1 (n = 180)	HH 2 (n = 180)	HH 1	HH 2	
Carbohydrate	178	178	98.9	98.9	98.9
Animal protein	137	144	76.1	80	78.1
Fruit	0	0	0	0.0	0.0
Vegetable	3	2	1.7	1.1	1.4

Table 39. Composition of lunch of two households, Sako Tulang

Type of food	Frequency		Percentage		Percentage (Average)
	HH 1 (n = 168)	HH 2 (n = 173)	HH 1	HH 2	
Carbohydrate	166	169	98.8	97.7	98.3
Animal protein	134	132	79.8	76.3	78.1
Fruit	0	0	0.0	0.0	0.0
Vegetable	4	6	2.4	3.5	2.8

Table 40. Composition of dinner of two households, Sako Tulang

Type of food	Frequency		Percentage		Percentage (Average)
	HH 1 (n = 174)	HH 2 (n = 175)	HH 1	HH 2	
Carbohydrate	157	164	90.2	93.7	91.95
Animal protein	112	122	64.4	69.7	67.05
Fruit	0	0	0.0	0.0	0.0
Vegetable	2	1	1.1	0.6	0.85

APPENDIX 2. Detailed breakdown of food intake records in Terab

Table 41. Composition of breakfast of two households, Terab

Type of food	Frequency		Percentage		Average
	HH 1 (n = 132)	HH 2 (n = 46)	HH 1	HH 2	
Carbohydrate	93	37	70.5	80.4	75.5
Animal protein	72	19	54.5	41.3	47.9
Fruit	16	1	12.1	2.2	7.2
Vegetable	6	1	4.5	2.2	3.4

Table 42. Composition of lunch of two households, Terab

Type of food	Frequency		Percentage		Average
	HH 1 (n = 149)	HH 2 (n = 47)	HH 1	HH 2	
Carbohydrate	137	42	91.9	89.4	90.7
Animal protein	114	34	76.5	72.3	74.4
Fruit	12	5	8.1	10.6	9.3
Vegetable	0	5	0.0	10.6	5.3

Table 43. Composition of dinner of two households, Terab

Type of food	Frequency		Percentage		Average
	HH 1 (n = 180)	HH 2 (n = 60)	HH 1	HH 2	
Carbohydrate	177	59	98.3	98.3	98.3
Animal protein	126	38	70.0	63.3	66.7
Fruit	1	0	0.6	0.0	0.3
Vegetable	0	0	0.0	0.0	0.0

APPENDIX 3. Detailed breakdown of food intake records in Air Hitam

Table 44. Composition of breakfast of two households, Air Hitam

Type of food	Frequency		Percentage		Average
	HH 1 (n = 180)	HH 2 (n = 158)	HH 1	HH 2	
Carbohydrate	179	148	99.4	93.7	96.6
Animal protein	134	106	74.4	67.1	70.8
Fruit	0	0	0.0	0.0	0.0
Vegetable	10	0	5.6	0.0	2.8

Table 45. Composition of lunch of two households, Air Hitam

Type of food	Frequency		Percentage		Average
	HH 1 (n = 169)	HH 2 (n = 160)	HH 1	HH 2	
Carbohydrate	163	159	96.4	99.4	97.9
Animal protein	125	123	74.0	76.9	75.4
Fruit	0	0	0.0	0.0	0.0
Vegetable	7	7	4.1	4.4	4.3

Table 46. Composition of dinner of two households, Air Hitam

Type of food	Frequency		Percentage		Average
	HH 1 (n = 176)	HH 2 (n = 177)	HH 1	HH 2	
Carbohydrate	158	168	89.8	94.9	92.3
Animal protein	107	119	60.8	67.2	64.0
Fruit	0	0	0.0	0.0	0.0
Vegetable	3	1	1.7	0.6	1.1

APPENDIX 4. List of edible plants and animals by the Orang Rimba in three groups

Table 47. Varieties of tubers consumed by the the Orang Rimba, 2013-2016

Classification	Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Tubers	Benor	Gembili	Lesser yam	Dioscorea esculenta	✓	✓	✓
	Gadung	Gadung	Yam	Dioscorea hispida	✓	✓	✓
	Ubi Kayu	Ubi Kayu	Cassava	Manihot utilissima	✓	✓	✓
	Ubi Rambat	Ubi Jalar	Sweet potato	Ipomoea batatas	✓	✓	✓
	Keladi	Talas/Kimpul	Taro	Xanthosoma violaceum	✓	✓	✓
	Tebu	Tebu	Sugar cane	Saccharum officianarum	√	√	√
Palm starch	Sagu	Sagu		Metroxylon sagu Rottb.	✓	✓	✓

Table 48. Varieties of fruits consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Rambutan	Rambutan asli	Rambutan	Nephelium lappaceum	✓	✓	✓
Tampuy	Tampuy nasi	Unidentified	Baccaurea macrocarpa	✓	✓	✓
Cempedak	Cempedak	Unidentified	Artocarpus champeden	✓	✓	✓
Duku	Duku	Unidentified	Lansium domesticum	✓	✓	✓
Benton	Unidentified	Unidentified	-			✓
Durian haji	Durian Haji	Durian	Durio zibethinus	✓	✓	✓
Kemang	Kemang	Unidentified	Mangifera kemanga			✓
Buntor	Petaling	Unidentified	Ochanostachys amantacea			✓

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Tayoi	Mbacang hutan	Unidentified	Mangifera odorata			✓
Langsat	Langsat	Unidentified	Lansium domesticum			✓
Dekan	Rambutan Liar	Wild rambutan	Nephelium uncinatum			✓
Harong Paro	Rambutan Kabung	Rambutan Kabung	Nephelium cuspidatum			✓
Tunggo	Kepundung	Unidentified	Baccaurea acimosa			✓
Pisang	Pisang	Banana	Musa paradisiaca	✓	✓	✓
Nangka	Nangka	Jackfruit	Cocos nucifera	✓	✓	✓
Mangga	Mangga	Mango	Mangifera indica L	✓	✓	✓
Manggis	Manggis	Mangosteen	Garcinia mangostana L	✓	✓	✓
Kandis	Kandis	Purple mangosteen	Garcinia rigida	✓	✓	✓
Siuk	Rambutan	Rambutan	Nephelium rambutanake	✓	✓	
Kabau	Kabau	Unidentified	Archidendron bubalinum	✓	✓	✓
Tempunik	Cempunik/ Tampunik	Unidentified	Artocarpus rigidus	✓	✓	✓
Tapos	Kayu Tapos	Unidentified	Elaterios tapos Bl	✓	✓	✓
Bekil	Cempedak air	Unidentified	Artocarpus kemando	✓	✓	✓
Durian Daun	Durian Daun	Unidentified	Durio oxleyanus	✓	✓	✓
Rambai	Rambai	Unidentified	Baccaurea motleyana	✓	✓	✓
Matoa	Matoa	Unidentified	Pometia pinnata	✓	✓	✓

Table 49. Varieties of squirrels consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Posou	Tupai Posau	Four-striped ground squirrel	Loriscus hosei	✓	✓	✓
Kelapo	Tupai Kelapa	Plantain squirrel	Callosciurus notatus	✓	✓	✓
Hulot	Bajing Kerdil Mulut Merah	Sculptor squirrel	Glyphotes simus	✓	✓	✓
Muncung	Tupai Tanah	Large tree shrew	Tupaia tana	✓	✓	✓
Belang	Bajing Tiga Warna	Prevost's squirrel	Callosciurus prevostii	✓	✓	✓
Seretuk	Jelarang Bilalang	Cream-coloured giant squirrel	Ratufa affinis	✓	✓	✓
Peri	Tupai Kerdil Telinga Hitam	Black-eared squirrel	Nannosciurus melanotis	✓	✓	✓
Sepanjong Lidah	Bajing Tanah Moncong Runcing	Broad-taile molossus bat	Rhinosciurus laticaudatus			✓

Table 50. Varieties of rats consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Tobing	Tikus Gunung Raksasa Sunda	Mountain giant rat	Sundamys infraluteus		✓	✓
Pematong	Tikus Duri Merah	Rajah spiny rat	Maxomys rajah		✓	✓
Bumbun	Tikus Raksasa Ekor Panjang	Long-tailed giant rat	Leopoldamys sabanus		✓	✓
Betong	tikus serdang	Brown rat	Rattus norvegicus		✓	✓
Belu dedo	Tikus Duri Kecil	Small spiny rat	Maxomys baeodon		✓	✓
Mencit	Tikus rumah	House mouse	Mus castaneus		✓	✓
Kukus	Moonrat/ Tikus Besar	Moonrat	Echnosorex gymnurus	✓	✓	✓

Table 51. Varieties of bats consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Buluh	Kelelawar Sayap Kecil	Greater bamboo bat	Tylonycteris robustula		✓	✓
Beyot	Kalong Pemakan Serangga	Naked bulldog bat/Greater naked bat	Cheiromeles torquatus		✓	✓
Keluluang	Lempang	Large flying fox	Pteropus vampyrus		✓	✓
Kelelawor labing	Kudanil Terbang	Fawn-coloured leaf-nosed bat	Hipposideros cervinus			✓
Kelelawor mergo	Barong Dwiwarna	Bicoloured leaf-nosed bat	Hipposideros bicolor			✓
Kelelawor doun pisang	Lasiwen Pucuk Pisang/Lasiwen Biasa	Nepalese whiskered bat	Myotis muricola			✓
Betung buruk	Bronze tube-nosed bat	Bronze tube-nosed bat	Murina eanea			✓

Table 52. Varieties of birds consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Kouw	Kuau Raja	Great argus	Argusianus argus	✓	✓	✓
Betaji (B)	Sempidan Sumatra	Salvadori's pheasant	Lophura inornata	✓	✓	✓
Dugang/Muo	Sempidan Biru	Bornean crested fireback	Lophura ignita rufa		✓	✓
Henggang	Rangkong Badak	Rhinoceros hornbill	Buceros rhinoceros	✓	✓	✓
Burung Geding	Rangkong Gading	Helmeted hornbill	Buceros virgil		✓	✓
Kuneng Paru	Julang Jambul Hitam	Wrinkled hornbill	Aceros corrugatus	✓	✓	✓
Pusoron (B)	Julang Emas	Wreathed hornbill	Aceros undulatus		✓	✓
Puyu	Puyuh Gonggong Biasa	Grey-breasted patridge	Arborophila orientalis		✓	✓
Selelayak	Kangkareng Hitam	Asian black hornbill	Anthracoceros malayanus	✓	✓	✓
Huban (B)	Enggang Jambul	White-crowned hornbill	Aceros comatus	✓	✓	✓

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Kongkoy	Enggang Klinghingan	Bushy-crested hornbill	Anorrhinus galeritus	✓	✓	✓
helang Kedundung	Elang Ikan Kecil	Lesser fish eagle	Ichthyophaga humilis		✓	✓
Lembuon/ Limbukon	Pergam Hijau	Green imperial pigeon	Ducula aenea		✓	✓
Siulon	Puyuh Sengayan	Crested patridge	Rollulus rouloul	✓	✓	✓
Sarop	Ciung Air-pongpong	Fluffy-backed tit-babbler	Macronous ptilosus		✓	✓
Pipit	Bondol Tunggir Putih	White-rumped mania	Lonchura striata		✓	✓
Berba	Merbah Cerukcuk	Yellow-vented bulbul	Pycnonotus goiavier	✓	✓	✓
Cekok/Lekok	Kadalan Beruang	Black-bellied malkoha	Phaenicophaeus diardi		✓	✓
Murai Batu	Kucica Hutan	White-rumped shama	Copsychus malabaricus		✓	✓
Sembubut	Bubut Besar	Crow pheasant	Centropus cinensis		✓	✓
Sembubut Rantou	Kadalan Selaya	Raffles's malkoha	Phaenicophaeus chlorophaeus		✓	✓
Doun	Cica Daun Besar	Lesse green leafbird	Chloropsis cyanopogon	✓	✓	✓
Cinta Kasih	Paruh Kodok KepalaPucat	Short-tailed frogmouth	Batrachostomus poliolophus		✓	✓
Cabe	Cinenen Merah	Rofous-tailed tailorbird	Orthotomus sericeus	✓	✓	✓
Kololohuy	Tepus Tunggir-Merah	Chestnut-rumped babbler	Stachyris maculata		✓	✓
Kellelohui Gejoh	Luntur Gunung	Javan trogon	Harpactes reinwardtii	✓	✓	✓
Bintialo	Udang Api	Black backed kingfisher	Ceyx erithacus		✓	✓
Binti Aik	Meninting Besar	White-crowned forktail	Enicurus leschenaulti		✓	✓
Tiung	Tiong Emas	Indian hill mynah	Gracula religiosa		✓	✓
Cecap	Pijantung Tasmak	Spectacled spiderhunter	Arachnothera flavigaster	✓	✓	✓
Engkal-engkal	Kangkareng Perut Putih	Oriental Pied hornbill	Anthracoceros albirostris	✓		✓

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Punoi	Punai Pengantin	Grey-cheeked green pigeon	Treron griseicauda	✓		✓
Pergam	Walik Putih	Banded fruit dove	Ptilinopus cinctus	✓		✓
Bengkoak	Punai Besar	Large green pigeon	Treron capellei	✓		✓
Bencilak	Prenjak Jawa	Yellow lelied prinia	Prinia flaviventris	✓		✓
Helang Kedundung	Elang Ikan Kecil	Lesser fish eagle	Ichthyophaga humilis			✓
Helang Tonggak	Baza Jerdon	Unidentified	Aviceda jerdoni			✓
Ayam Hutan	Ayam Hutan Merah	Chicken/ domestic fowl	Gallus gallus			✓
Serindit	Serindit Melayu	Blue-crowned hanging-parrot	Loriculus galgulus			✓
Serindit	Nuri Tanau	Blue-rumpped parrot	Psittinus cyanurus			✓
Beburungon	Celepuk Besar	Raptor	Ottus sagittatus			✓
Kellelohui Gejoh	Luntur Gunung	Javan trogon	Harpactes reinwardtii			✓
Kesumbo	Luntur Putri	Scarlet-rumped trogon	Harpactes duvaucellii			✓
Bengkako	Cekakak Batu	Banded kingfisher	Lacedo pulchella			✓
Bintialo	Udang Api	Black backed kingfisher	Ceyx erithacus			✓
Binti aik	Meninting Besar	White-crowned Forktail	Enicurus leschenaulti			✓
Bengkako Pematong	Cekakak Hutan Melayu	Rofous-collared kingfisher	Actenoides concretus			✓
Burung Rapah	Cirik-cirik Kumbang	Red-bearded bee-eater	Nyctyornis amictus			✓
Burung Hubanon	Enggang Jambul	White-crowned hornbill	Aceros comatus			✓
Kuning Paru	Julang Jambul Hitam	Wrinkled hornbill	Aceros corrugatus			✓
Cancong	Takur Tutut	Red-crowned barbet	Megalaima raflesii			✓
Sembubut	Bubut Alang-alang	Lesser coucal	Centropus bengalensis			✓

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Pialing	Madi Kelam	Dusky broadbill	Corydon sumatranus			✓
Tiung tanoh	Paok Hijau	Hooded pitta	Pitta sordida			✓
Kuning	Cucak Kuricang	Grey-cheeked bulbul	Pycnonotus atriceps			✓
Berba jelatong	Empuloh Janggut	Brown-cheeked bulbul	Alophoixus bres			✓
Sawai	Srigunting Batu	Greater racket-tailed drongo	Dicrurus paradiseus			✓
Sinyinjeri	Tangkar Ongklet	Crested jay	Platylophus galericulatus			✓

Table 53. Varieties of snakes consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Sawoh	Sanca batik	Reticulated phyton	Phyton reticulatus	✓	✓	✓
Todung/kobra	Kobra	Javan spitting cobra	Naja sputatrix		✓	
Pandok	Sanca darah sumatra	Blood phyton	Phyton brongersmai	✓	✓	✓
Pepunti	Ular cincin mas	Gold-ringed cat snake	Boiga dendrophila	✓	✓	✓
Gerom	Ular anang	King cobra	Ophiophagus hannah		✓	✓
Piahi	Ular karung	Elephant's trunk snake	Acrochordus javanicus		✓	✓
Senamo	Ular gadung	White-lipped tree viper	Cryptelytrops albolabris		✓	✓

Table 54. Varieties of turtles consumed by the the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Boyuku	Bajuku	Bornean river turtle	Orlitia borneensis	✓	✓	✓
Pangkak	Kura kura Duri	Spiny turtle	Heosemys spinosa	✓	✓	✓
Beneng	Baning Coklat	Asian forest tortoise	Manouria emys	✓	✓	✓
Sebado	Kura-kura Pipi putih	Black marsh turtle	Siebenrockiella crassicollis	✓	✓	✓
Lelabi	Antipia	Asian giant softshell turtle	Pelochelys cantori			✓
Sesembung	Lani-labi Irian	Giant softshell turtle	Pelochelys bibroni			✓
Sembodo Hangit	Kuya Batok	South Asian box turtle	Cuora amboinensis			✓

Table 55. Varieties of amphibia invertebrata consumed by the Orang Rimba, 2013-2016

Local Name	Bahasa Indonesia	English	Species	Sako Tulang	Terab	Air Hitam
Katak	Katak	Frog	Rana sp	✓	✓	✓
Kodok	Katak	Frog	Rana sp		✓	✓
Udang beras	Udang Beras	Red Nose Shrimp	Caridina gracilirostris	✓	✓	✓
Kepiting Air	Kepiting Air	Freshwater Crab	Parathelphura tridentata	✓	✓	✓
Lebah Madu	Lebah Madu	Honeybee	Apis sp	✓	✓	✓
Cicak	Cicak	House Geckos	Hemidactylus sp	✓	✓	✓
Kelelatu	Rayap/Pengurai	Termites	Termitidae	✓	✓	✓
Keong	Keong	Snail	Pila sp	✓	✓	✓
Kukang (B)	Kodok	Common Toad	Bufo sp		✓	✓
Kelampaian Hantu	Belalang Sentadu	Grasshopper	Mantidae	✓	✓	✓
Sentadak	Belalang Sentadu	Grasshopper	Mantidae	✓	✓	✓
Belalang Rusa	Belalang	Javanese Grasshopper	Valanga sp	✓	✓	✓

Curriculum Vitae

Ekoningtyas Margu Wardani (Dani) was born on 30 October 1976 in the small town of Purwodadi in Central Java, Indonesia. She is the first child from teacher parents, her mother was a kindergarten teacher, and her father was a school principal. After finishing her high school education in Purwodadi, she went to university to study economics. She finished her bachelor's and master's degrees at Universitas Gajah Mada in Yogyakarta (Indonesia). From February 2004 up to January 2015, she was affiliated with the Centre for Asia and Pacific Studies at Universitas Gadjah Mada as a researcher. Her first field research among the Orang Rimba took place during that period.

In 2012 she was accepted as a PhD student at the Institute for Cultural Anthropology and Development Sociology of Leiden University, with a grant from the Louwes Fund for Research on Water and Food. For this research, she returned to Jambi to do fieldwork among the Orang Rimba again. At present she is a Programme Specialist for Resource Economy and Livelihood at the ASEAN Centre for Biodiversity, the Philippines. Besides being actively engaged in her regular work, she also works on research projects and consultancies. Her focus is on natural resource management, food security, indigenous peoples, environmental economics, and sustainable livelihoods.

Food Security among the Orang Rimba in Jambi

By using the lens of food security, it is possible to understand the transformation processes of the Orang Rimba hunter-gatherers in Central Jambi (Sumatra, Indonesia) in times of change. The establishment of rubber and oil palm plantations in their home territory has become the major factor in the economic development of the province.

This dissertation uses a multidisciplinary approach to study food security, employing methods from economics and anthropology. It analyzes the food security conditions using the combined techniques of daily food intake and ethnographic approaches.

While the Orang Rimba are facing food insecurity conditions due to various pressures, it is of great importance to protect the remaining forest in which the Orang Rimba live. This is not only crucial for the Orang Rimba's food security and livelihoods but also for protecting the biodiversity in the Bukit Duabelas National Park and its adjacent areas that the Orang Rimba call their home.