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Persoon, G.A.; Wardani, E.M.

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G. PERSOON[a] and E.M. WARDANI[b]

[a]*Professor Environment and Development (em.), Institute Cultural Anthropology and Development Sociology, Leiden University, The Netherlands*
[b]*Programme Specialist for Resource Economy and Livelihood ASEAN Centre for Biodiversity, The Philippines*

Email: persoonga@fsw.leidenuniv.nl and wardani.e.m@gmail.com

HIGHLIGHTS

- The social impact of logging operations can only be understood as the cumulative effect of a long range of interconnected land use changes.
- The Orang Rimba, the original forest dwellers of Central Sumatra, have been heavily influenced by extensive logging operations over the past few decades.
- Contrary to early predictions, they have survived mainly by adapting to the changing conditions but also by avoiding complete assimilation.
- Governmental efforts to bring the Orang Rimba into the national socio-economic mainstream have had limited success.
- The international discourse on Indigenous peoples has to a limited extent trickled down in Indonesia with some positive effects on the forest dwelling communities.

SUMMARY

The landscape of Central Sumatra has changed rapidly over the past few decades. Industrial logging and the subsequent conversion of the lowland rainforests into oil palm and rubber plantations, the establishment of transmigration sites and the ever-expanding road network have forced the forest dwelling communities of the Orang Rimba to adapt their traditional modes of subsistence. Traditional hunting, fishing and gathering simply did not yield enough food and forest products for exchange purposes anymore. In this contribution an overview will be given of the impact of large-scale logging and the processes of forest conversion that have taken place in the wake of the logging operations. The article covers a period of about four decades in which fieldwork by both authors has taken place at various periods. It will show the various ways the Orang Rimba have reacted to the challenges and the opportunities that emerged as a result of these operations.

Keywords: social impact, Orang Rimba, Sumatra /Indonesia, adaptation, survival

Modes de vie en mutation en forêts converties: l'impact de l'exploitation forestière sur les Orang Rimba (Jambi, Indonésie)

G. PERSOON et E.M. WARDANI

Au cours des dernières décennies, le paysage du Sumatra central a connu un changement rapide. L'exploitation forestière industrielle et la conversion subséquente des forêts pluviales de plaine en plantations de palmiers à huile et de caoutchouc, l'installation de sites de transmigration et l'expansion continue du réseau routier ont contraint les communautés des Orang Rimba, vivant au sein des forêts, à adapter leurs modes de subsistance traditionnels. La chasse, la pêche et la cueillette traditionnelles ne produisaient plus assez de nourriture et de produits forestiers pour les échanges. Le présent article donne un aperçu de l'impact de l'exploitation forestière à grande échelle et des processus de conversion de la forêt qui ont eu lieu dans le sillage des opérations d'exploitation. L'article couvre une période d'environ quatre décennies au cours de laquelle le travail de terrain a eu lieu à différentes périodes. Sont abordées les multiples façons dont les Orang Rimba ont réagi aux défis et aux opportunités qui ont émergé à la suite de ces opérations.

Cambio de estilos de vida en los bosques convertidos: el impacto de las explotaciones forestales en los Orang Rimba de Jambi (Indonesia)

G. PERSOON y E.M. WARDANI

El paisaje de Sumatra Central ha cambiado rápidamente en las últimas décadas. La tala industrial y la posterior conversión de los bosques tropicales de tierras bajas en plantaciones de palma de aceite y caucho, el establecimiento de focos de transmigración y la red de carreteras en constante expansión han obligado a las comunidades de los Orang Rimba que viven en el bosque a adaptar sus medios de vida tradicionales. La caza, la pesca y la recolección tradicionales ya no producen suficientes alimentos y productos forestales para el trueque. En este trabajo se presenta una visión general del impacto de la tala a gran escala y de los procesos de conversión forestal que han tenido lugar tras las operaciones de tala. El artículo abarca un periodo de unas cuatro décadas en las que se han realizado trabajos de campo en varios periodos. Se muestran las diversas formas en que los Orang Rimba han respondido a los retos y a las oportunidades que surgieron como resultado de estas operaciones.

INTRODUCTION

Since the 1970s industrial logging increased in intensity and scope in many countries in the tropical rainforests of Asia, Africa and Latin America. Large scale logging operations were stimulated by the rapidly increasing demand for tropical timber in many western countries including Japan, which successfully protected its domestic forests. In addition to the demand for timber, forests were also being harvested in order to make land available for plantations of agricultural crops including industrial crops like rubber, coconuts or palm oil and edible fruits such as pineapple. It took a few years before the impact of this large-scale deforestation and forest conversion on the life of forest dwelling communities started to attract the attention of scientists but towards the end of the 1980s there was a public outcry once the injustice done to the Penan of Sarawak became widely publicized through some messages and photographs that were smuggled out of Sarawak on the Malaysian part of Borneo by the Swiss Bruno Manser (Manser 1996, Brosius 2008). This soon led to a boycott of Malaysian timber by the European parliament. At the same time the awareness among the general public started to grow about the hidden costs in the production of timber and serious impacts on the life of Indigenous forest dwellers. Within a couple of years this would lead to inclusion of Indigenous rights in principles and criteria for sustainable timber production in certification systems like FSC (Forest Stewardship Council) and PEFC (Programme for Endorsement of Forest Certification). Some countries, including the Netherlands, started to formulate their first policies towards tropical rainforests and their inhabitants in relation to the import and use of timber for various purposes. In addition to the ecological impact, there were also serious concerns about the impact on the life of the Indigenous forest dwellers (see for instance Gabor and Pronk 1991). Gradually the discussion would widen to include timber from the temperate and boreal zones.

At the end of the 1980s and in the 1990s numerous studies started to appear on the impact of the large logging operations in various countries like Brazil, Indonesia, the Philippines and many others (Davis 1977, The Ecologist 1985, Denslow and Padock 1988). At the same time advocacy groups for the rights of Indigenous peoples like Survival International (SI), Cultural Survival (CS) and the International Working Group on Indigenous Affairs (IWGIA) started to focus on effects on such groups. In many of the field studies carried out among these forest dwellers there was an image of them being turned into the victims of the logging operations and forest conversion. In these publications strong wording was used to describe the impact on such peoples. And in general, predictions for their future were phrased in extremely negative or pessimistic terms like 'vanishing peoples', 'tribal extinction' or 'death in the forest', calling for immediate protective actions from governments to undo or at least reduce the negative impact for such peoples (Eder 1987, Vitug 1993, Sponsel *et al*. 1996, Tempo 1990, Bahuchet *et al*. 2001).

It would take a few years before the first internationally accepted legal framework for the protection of the territorial and cultural rights of Indigenous peoples were formulated and put into practice. The Convention on Biological Diversity of 1992 did not provide a sufficient basis to that end while the stronger language of ILO Convention 169, adopted in 1989, remained largely unused because it was not ratified by most countries involved in these logging operations or in the international timber trade. In the meantime, however, and partly based on some widely published scandals of seriously harmed Indigenous peoples, many internationally operating organizations like the World Bank, Asian Development Bank and also international conservation agencies like WWF and IUCN started to formulate their policy guidelines for the protection of Indigenous peoples. A major landmark in this development was the adoption of the UN Declaration on the Rights of Indigenous Peoples in September 2007. Since that date, the protective measures and policy instruments for the involvement of Indigenous peoples in decisions about interventions in their territories, like Free, Prior and Informed Consent (FPIC), have trickled down in international law and in the policy guidelines of most organizations and agencies dealing with Indigenous peoples. To what extent these policies are actually implied and whether they lead to reduced impact in the life of the Indigenous peoples is difficult to determine. For many of them such protective measures have only come at a fairly late stage. Much has happened already in terms of logging and forest conversion in the few decades before such protective measures were formulated and implemented, often quite reluctantly (Rombouts 2014).

In this contribution to the Special Issue of the International Forestry Review we want to discuss the ways the Orang Rimba of Central Sumatra (Jambi Province) have reacted towards the large logging operations and the conversion processes of the lowland forests in their home territories since the 1970s. Though it was quite clear in the early stages of logging operations that the Orang Rimba were suffering from the degradation of their environment, Indonesia was slow in recognizing the serious impact of logging on the life of its forest-dwelling communities. That has to some extent changed in recent years as a result of the strong lobby of the Indigenous peoples' movement in the country, changes in cultural policies and a number of crucial court decisions in favour of Indigenous rights (Suryani 2021, Arizona 2022). In order to describe the course of events in Central Sumatra, it is necessary to describe the methodology of how to study 'impact' over a longer period of time and highlight the wider social and ecological context of the traditional home territory of the Orang Rimba. As this article is largely based on a number of periods of field research that have taken place over a few decades, data collection was of a special nature, that will be described in the section on methods.

Social impact of logging

Methodologically, the research question 'What are the social impacts of logging?' which is the leading question of this Special Issue, seems a rather straight forward one. Logging operations lead to all kinds effects and part of them will be related to the communities that live in or near the forest in which these operations are taking place. These effects could

be described, analyzed and explained making use of available theories and comparative studies. However, when looking more closely on the ground and looking over a longer period of time, the situation is more complex. On the basis of observed and described existing conditions, there can be various types of causal explanations. One of them consists of all the bio-physical changes that occur in the forest environment and could be related to the ways forest-dwelling communities continue to make use of the forest's resources under the changing conditions. The other type of explanation involves the intentions of members of societies including their perceptions on which they base their actions. Explanations should, according to Vayda and Walters (2011), be made through finding out the causal history of 'events', or by exploring the causal chains that lead to the 'events', which are defined as something happening somewhere at a particular interval of time. It is argued that the causal chain of events that actually did happen, can be contrasted with events that did not occur even though, based on theoretical or practical assumptions, they were likely to happen (Vayda and Walters 2011, 2-7).

Applying this line of reasoning to the key question "*What are the social impacts of logging*?" calls for causal chains of events or conditions that could be ascribed to logging operations within a particular area. Much has been written about the direct impact of logging operations, including the development of infrastructure like a road network, on forest-dwelling populations (FAO 1999, Bahuchet *et al*. 2001, Laurence *et al*. 2009, Cairns 2015). Usually, such impact is described and explained in terms of causal reasoning. Because of the logging operations there are changes in the environment and also in the social-cultural context in which these people live. Or, as eloquently described by Ley Tuck-Po in her book about the Batek in peninsular Malaysia, the 'pathways' through the forest, in a literal as well as metaphorical sense, are changing (Lye 2018). This impact however is not a static State of affairs. Logging operations, including the felling of trees and extraction of the logs, often require the development of a road network. These operations will also bring workers into the area who gradually develop various kinds of interaction with the forest dwelling communities. At a later stage new migrants might enter the area in the wake of the logging companies in search of arable land. Logging camps with saw-mills often develop into small settlements, attracting new people and new activities, like grocery shops and restaurants. As a result the population density will increase leading to more interaction with the original forest dwellers. In other words, as time passes, what started as the direct impact of straightforward logging operations, will gradually develop in a complex chain of new events and conditions which can in themselves be described and explained again as causes and effects of the newly created situation. Forest roads for instance, which were initially constructed to extract the logs, are often improved over time and this, in itself, will have additional impacts on top of the logging operations, in terms of new people arriving or trade opportunities being promoted (see for instance Laurance *et al*. 2009).

In some cases it is useful to differentiate between direct and indirect impacts of a particular action (see for instance FAO 1999) but over time this difference may lose its relevance, also because of the joint and cumulative nature of causes and effects (FAO 1999). Paradoxically, one could argue that even the support for rights of Indigenous peoples that emerges on the basis of dramatic events inside the forest was triggered by the logging operations. In the causal history of providing support for these communities, the logging operations feature prominently as the cause that has motivated certain individuals or organizations to take action to undo or reduce the further marginalization of the forest dwelling communities.

By contrasting the causal chains of events related to the impact of logging, with events that did not happen, but that were predicted in numerous cases, it is clear that forest dwelling communities could not only or predominantly be described as just 'victims'. Nor did they go extinct, and neither were they completely assimilated. Though the impact of logging was large, dramatic and manifold, concepts like 'victimization', 'ethnic extinction' or 'complete assimilation' do not sufficiently describe how the people involved have reacted to the logging operations over longer periods of time. Under these rapidly changing conditions, they have also looked for new opportunities to cope with the new challenges. They were not just the passive victims of powerful external interventions in their area. So, in analyzing the causal chain leading up to their present conditions there should also be room for their creative knowledge and adaptations. This intra-cultural variation in patterns of the Orang Rimba's reactions to the cumulative impacts of logging, has triggered the effort to present this overview in the context of this Special Issue.

METHODS

This article is based on fieldwork that was conducted among the Orang Rimba by both authors. The duration of the fieldwork periods varied in length of short visits to more extended periods of several months. The first visit of the first author into the area was made in 1983 and the last visit took place in 2013. Though the reasons for visiting the Orang Rimba were varied, the main methods that were applied were ethnographic and anthropological research methods, that is structured and unstructured observation, interviewing various groups of informants and participant observation by living as close as possible with the Orang Rimba in their small camps. In addition to the discussions with Orang Rimba, interviews were also conducted with relevant outsiders like governmental officials, managers of logging camps, missionaries and staff members of NGOs working in the area.

The initial visit of the first author to this area took place in the context of an evaluation mission to study the impact of processes of religious conversion among the Orang Rimba in 1983. In 1985 more extensive fieldwork was done as part of his PhD work aimed to study, in a comparative perspective, both the impact of logging operations and the effects of the governmental policies to resettle the Orang Rimba. A year later he was asked to join a as supervisor a field excursion of

the international students at the School for Nature Management of the Indonesian Ministry of Forestry to study the impact of the newly declared protected area of Bukit Duabelas on the lifestyle of the Orang Rimba. In later years he regularly visited the area in the context of various research or consultancy projects in which the changes among the Orang Rimba were a crucial aspect. The last visit took place in 2013 together with Dr. Tessa Minter, one of the editors of this Special Issue, to supervise one of our PhD students E.M. Wardani, the second author, who was conducting fieldwork among various groups of Orang Rimba with a focus on food production and consumption under highly diverse environmental conditions. Already at an earlier stage Wardani had conducted fieldwork among the Orang Rimba in 2006. She returned to Central Jambi for data collection for her PhD at the end of 2012 and spent the next year almost entirely in the field, focusing on the Bukit Duabelas area. First she worked with the Terab and Sako Tulang groups before moving to the Air Hitam area, south of the mountain range. Additional field visits were made in January/February and August 2014, March 2015 and May/June 2016. The fieldwork aimed to collect information on the food intake and the food security among three groups of Orang Rimba. Detailed records of daily food intake and the ways this food was produced of obtained formed the basis of the analysis (Wardani 2022). The research was sponsored by the Louwes Fund for Research on Water and Food, administered by Leiden University.

During all these visits extensive notes were taken about the composition of the groups, the settlements, the various types of economic activities (such as hunting, fishing, gathering, gardening, rubber tapping, or wage labour), the interaction with outsiders (chain saw operators, truck drivers, camp managers, Malay farmers, governmental officials and missionaries) and their material possessions in and around their camps. Photographs were taken to document during these visits. These images provide a useful point of reference for comparison and the changes that have taken place over time. The focus of the fieldwork over the years has always been the central part of Jambi, that is the vast area around what is now called the Bukit Duabelas National Park but, whenever there was an opportunity, visits were also made to other Orang Rimba groups like those along the Trans Sumatra Highway.

In addition to the fieldwork, use was made of the available literature, including anthropological and ethnographic studies. In addition, reports of governmental agencies, NGOs publications and news items in the public media that paid attention to the situation of the Orang Rimba proved to be relevant. In comparison with many other relatively small ethnic groups in Indonesia, the Jakarta-based newspapers like Kompas, Media and Sinar Harapan often report on the situation of the Orang Rimba (CSIS 1994–2021).

MAP 1 *Map of Sumatra with roughly indicated the traditional home territory of the Orang Rimba*

The Orang Rimba

The total number of Orang Rimba is estimated at about 3,800 to 4,000 people (Elkholy 2016, Prasetijo 2015, Wardani 2022). Sumatra is, together with the Indonesian parts of Borneo, one of the most deforested tropical rainforest areas in the world (FWI/GFW 2002, FAO 2020). This process had started already in the Dutch colonial time with the establishment of some plantations and road constructions, but particularly since the beginning of the New Order regime of President Suharto (1966–1998), the scale and speed of forest conversion rapidly increased. The establishment of plantations for industrial crops like rubber or palm oil, mining operations for coal and minerals and the establishment of transmigration sites for migrants from the overpopulated islands of Java, Bali and Madura, have seriously damaged the lowland rainforests of Sumatra, leaving only small areas with a protection status relatively intact (Cribb 2010).

The people who call themselves Orang Rimba, literally 'People of the Forest', were referred to as 'Kubu' or Koeboe' in the early writings at the beginning of the 20th century[1]. One idea that was dominant in those writings, was that the poor hunter-gatherers in the extended lowland forests of Central Sumatra would not be able to continue their lifestyle in the long run. Their traditional area covered part of the province of Jambi as well as the southern part of the province of Riau and

[1] The people who are now called Orang Rimba, were for a long time known in the ethnographic literature as the Kubu (in the past sometimes also spelled as Koeboe or (in Dutch plural form) Koeboes). This term was most likely taken over from the Malay people who called the forest dwellers, Orang Kubu. This term, with its negative connotations of being 'primitive' and 'dirty', was generally used until the 1990's (see for instance Sandbukt 1988, and Persoon 1994). The Indonesian government started to use Suku Anak Dalam to refer to them in the 1970s when it became clear that the people themselves did not want to be called Kubu. In later years they have adopted the term Orang Rimba that is now widely used, both in the area among themselves but also in the ethnographic literature as well as in government documents (Hidayah 2020). In this contribution Orang Rimba is used to refer to these people unless older sources are quoted.

FIGURE 1 *Two Orang Rimba men on their way with meat of a hunted tapir. Sharing of food, and meat in particular, with other families is an important element in their social relations (Central Jambi, 1985) (© G.A. Persoon)*

the northern part of the province of South Sumatra. In most of the reports written by colonial officials and ethnographers, it was predicted that they would have to give up their way of life as a result of the encroaching outside world (Van Dongen 1906 and 1910, Hagen 1908, Keereweer 1940). Conversion of rainforest in this part of the island into oil palm and rubber plantations and the slowly expanding agricultural activities of the so-called Orang Melayu, or Malay people, named after the dominant ethnic group in this area, would make it impossible for the Orang Rimba to continue their way of life. This prediction however did not materialize. Even though the conversion processes of the lowland rainforest would increase dramatically after the World War II and in particular since the late 1970s, the Orang Rimba have still survived until this day in the central part of Sumatra. Their modes of life however have changed as a result of these conversion processes. In various ways the Orang Rimba have reacted to the challenges and the opportunities that emerged as a result of the large-scale logging operations and the subsequent conversion of the forests into other types of land use (Sandbukt 1988, Prasetijo 2015, Elkholy 2001, 2016, Wardani 2022).

Little is known about the origin of the Orang Rimba and there is still discussion whether or not they are what is being called 'primary hunter/gatherers' or a kind of 'secondary hunter/gatherers' who have fled for various reasons from agricultural societies in order to escape from slavery or other forms of exploitation. However, from the earliest reports, and since the times of their 'discovery', the Orang Rimba have always been described as extremely primitive hunter gatherers, who have retreated in the forests of this part of Sumatra (Van Dongen 1906 and 1910, Hagen 1908, Van Waterschoot van der Gracht 1915, Adam 1928, Loeb 1974). They maintained very limited contacts with the outside world through a system of so-called 'silent barter', through which they were exchanging forest products for a variety of exchange products with the Malay farmers and traders (Van Eerde 1929). A *jenang* served as an intermediary between the Orang Rimba and Orang Melayu, the dominant population in this part of Sumatra, who were living in villages along the banks of the major rivers.

The Orang Rimba lived in relatively small bands within a particular watershed. A number of such bands formed a larger social group, numbering up to a few hundred people, usually named after the watershed within which they were living. People would be referred to as the Orang Rimba of Air Hitam, Mengkakal or any other river. Each of these larger social groups had its own socio-political leader called *temenggung*[2]. In addition, there were a number of other positions within the group. The huts consisted of either lean-to's or small huts with a floor resting on four poles a little above the ground. They lived off hunting and gathering and some exchange of non-timber forest products (rattan, honey and *jernang* or 'dragon's blood' (a dark red resin from the fruits of a particular species of rattan called *Daemonorops Draco Bl.*)) in exchange of products like cloth, tobacco, machetes and iron spear heads. Wild tubers, fish and mollusks, and forest fruits provided most of the food for daily intake. Wild boar, deer, monkeys and numerous smaller animals were the main source of protein apart from fish. Their main hunting weapon was a spear that was not thrown over a large distance but more pushed into the hunted animal. They were not familiar with bow and arrow nor with the blow pipe as many other hunter/gatherers in Southeast Asia. Dogs were important during the hunting expeditions as they helped the hunters to trace the animal and surround it so that the hunter could kill it with his spear. For the daily intake of animal protein fishing was, and still is, extremely important. Fish were caught using various types of nets and traps. Food sharing within and between Orang Rimba groups was and still is common (Sandbukt 1988, Persoon 1994, Wardani 2022).

[2] The term *temenggung* is an old Malay and Javanese title of nobility. The term has been is use among the Orang Rimba for a long term. and was adopted from their Malay neighbours in the past for their internal leadership structure along with a number of other positions and titles, as well as for the interaction with outsiders. The *temenggung* of a particular group is the person who represents his members in the outside world (Prasetijo 2011).

FIGURE 2 *During his explorations in Jambi in 1913, mining engineer Van Waterschoot van der Gracht encountered a 'Wild Kubu tribe' near the village of Air Hitam (© Van Waterschoot van der Gracht with original caption)*

Afb. 2. Wilde Koeboe-stam — Ajer Itam, Djambi.

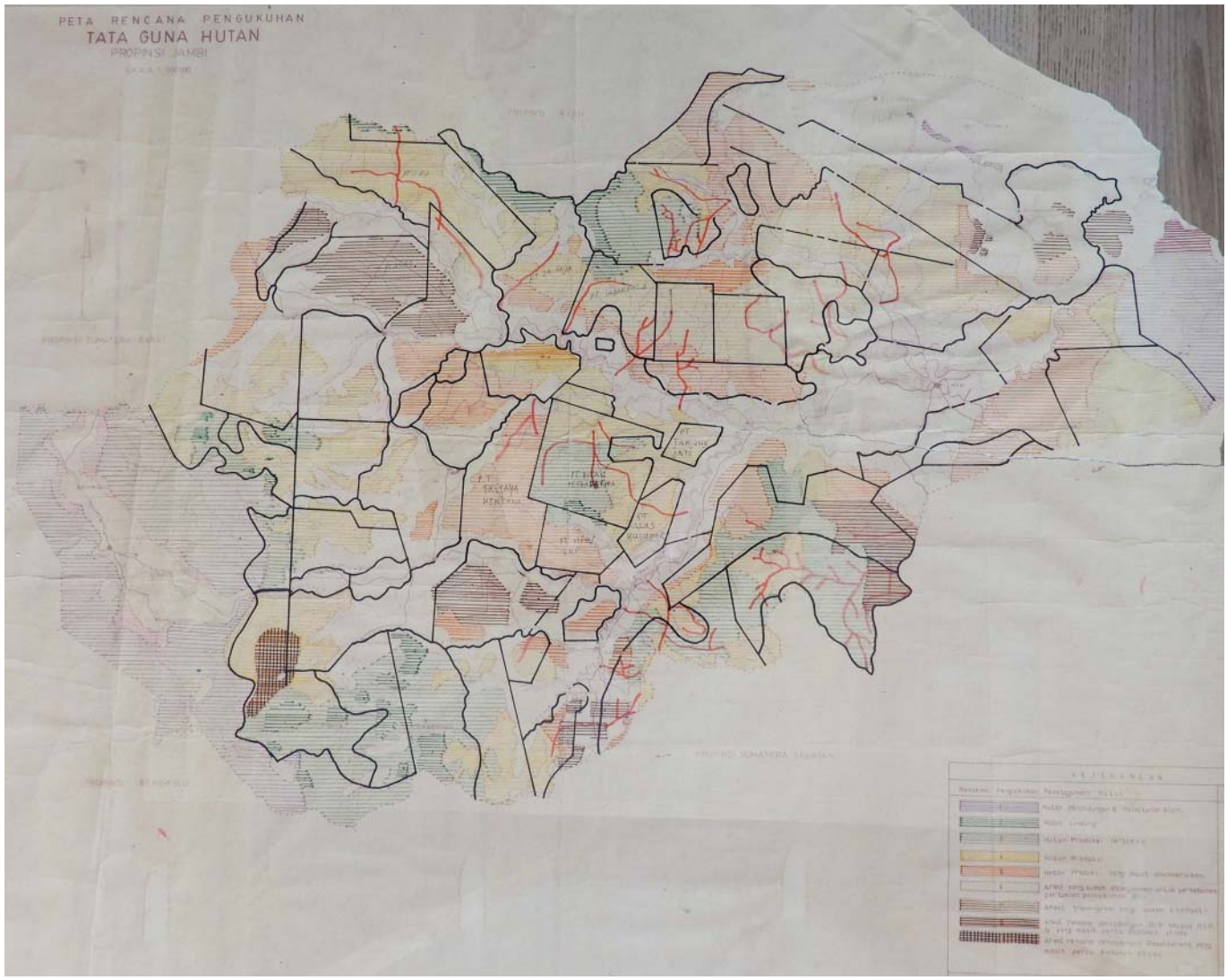
In the early literature it was not uncommon to differentiate between two types of Orang Rimba or 'Kubu', as they were called at that time. There were supposed to be 'wild Kubu' and 'tame Kubu'. The 'wild Kubu' were the ones who were still leading a traditional and semi-nomadic way of life of hunting and gathering in small bands of only a few families. The 'tame Kubu' were supposed to be on their way to become like the Malay people in the sense of adopting a more sedentary way of life in larger communities and gradually becoming less dependent on hunting and gathering because of their adoption of farming techniques. They did so by imitating the Malay farmers. It was expected that in the end they would be completely absorbed into the Malay community by accepting their religion, their language and style of living (Hagen 1908, Loeb 1974, Marzali 2018).

Compared to the interest of colonial administrators and ethnographers in the Orang Rimba in the first decades of the 20th century, because of the 'primitive' nature of their culture and their religion (or even the 'absence' of religious beliefs), relatively little attention was paid to them after Indonesian independence. It was not until the late 1970 or early 1980s that this interest started to grow again. In the meantime, the Indonesian government had published a number of reports aimed at identifying which groups should be targeted as the ones in urgent need of special development aid. Sometimes the same colonial terminology was used in these governmental reports to differentiate between the 'wild' (*liar*) and the 'tame' (*jinak*) Orang Rimba. This programme for the so-called 'isolated communities' of Indonesia was implemented by the Department of Social Affairs and it was meant to bring these communities into the mainstream of the country's social, cultural and economic life (Departemen Sosial 1973, 1974, 1983).

Intensification of logging

Though logging had been going on since the colonial times and the early years of Indonesian independence, its scale obtained a new magnitude after the New Order regime of former president Suharto was well established (Boomgaard *et al*. 2005). Large scale concessions were granted to logging companies often to be followed by a process of land clearing

MAP 2 *Map of land use plan for the province of Jambi in 1984 (Forestry Department). Apart from a small protected area, most of the forested land was planned to be either (limited) production forest or conversion forest, planned to be turned into plantations or transmigration sites. The legend differentiates nine types of land use. See enlarged legend (map 1a)*



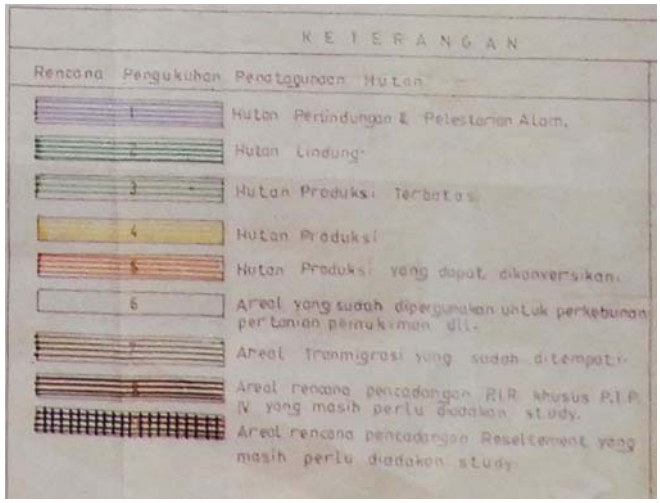
to make way for plantations or transmigrations sites. A forest concession map of the mid 1980s clearly shows, that apart from a small protected area (27,800 ha of the Bukit Duabelas mountain range), the whole central part of Jambi is given out to logging companies. Some parts are classified as production forests, others as conversion forests while a difference is made for conversion towards transmigration sites or plantations. Exempted from the concessions are the areas along the banks of the major rivers where the Malay people have settlements behind which they cultivate various crops including also rubber trees. These logging activities also implied the construction of a rather dense road network in the forest. The logs were usually taken to the main rivers, the Batanghari and the Tembesi, and the logs were floated downstream in enormous rafts to the saw mills near the town of Jambi, before entering the international timber market. Initially logging roads were being constructed but often in a later stage, these roads were up-graded to allow for the passage of not only heavy logging trucks and bulldozers but also smaller vehicles, motor bikes and various forms of public transport to reach the newly developed transmigration settlements. Some of these roads were even paved once the populations densities increased, and the need for transport grew as a result of that.

The arrival of powerful chainsaws, bulldozers, and logging trucks into the territory of the Orang Rimba must have been a shock. The work force of the logging companies showed little understanding for the impact of their activities on the life of the Orang Rimba. The logging activities disturbed the wildlife (in particular wild boar, deer, tapir, and various species of monkeys) which made hunting much more difficult for the forest dwelling communities. Elephants and tigers had already become scarce before that time even though traces of the animals could still be found in the 1980s.

The low population numbers, their scattered temporary settlements and their habit of shying away from confrontations with the outside world, made the Orang Rimba relatively invisible for the people involved in the encroaching logging operations. This way of avoiding encounters or even potential conflicts was even stronger among the Orang Rimba women who always keep a safe distance from outsiders. At a later

MAP 2a *Legend 'Forest use plan' (1984)*

1. Protected forest and nature reserve
2. Protection forest
3. Limited production forest
4. Production forest
5. Production forest that can be converted
6. Area that is already used for plantation/agriculture by communities
7. Transmigration area that is already occupied
8. Area that is planned for plantation, that still needs to be researched
9. Area reserved for resettlement plans, that still needs to be researched.



stage, after serious complaints by the Orang Rimba or through their *jenang*, some communication between the staff of the logging companies and the Orang Rimba was necessary for instance for the protection of their honey (*sialang*) trees in which bees had constructed their nests. Most of the logging camps actually had hired a local person to deal with the communication with the Orang Rimba. This was usually a Malay person from one of the nearby villages who was familiar with the Orang Rimba communities. In some cases young Orang Rimba men in particular started to hang around near the logging camps in search of cigarettes or something to eat. Some of them were actually hired by the companies to help the chain saw operators or the drivers of the bulldozers to find their way into the forest and to avoid damage to trees that were important for the Orang Rimba but their numbers remained very limited and they were only employed for the lowly paid jobs.

Quite often the Orang Rimba put up their small lean-to's along the logging roads. This allowed them to make use of the roads for the transport of rattan and even to hitch a ride to the logging camp or the weekly market in one of the nearby villages.

In addition, the government itself was charged with the responsibility for facilitating smooth operations in the forests. Part of the procedure was that the forest dwelling communities would be integrated into the official resettlement programme of the Department of Social Affairs. Apart from this programme, some houses in the transmigration projects, mainly aimed at transmigrants from Java or Bali, could also be

FIGURE 3 *A bulldozer pulls a hut for workers deeper into the forest. A number of Orang Rimba are hanging around while hoping for some cigarettes or something to eat (Central Jambi, 1985) (© G.A. Persoon)*

FIGURE 4 *Staff members of the logging company meet a few Orang Rimba along a forest road (Central Jambi, 1985) (© G.A. Persoon)*

reserved for the Orang Rimba (Departemen Sosial 1974, 1976, 2004). In general, however, the Orang Rimba did not accept such offers, at least not in the long run. A number of resettlement villages have actually been constructed. In some cases, the Orang Rimba did show up in the initial phase when there were handouts of food, cigarettes, and a number of tools, but very soon they would leave such settlements again and move back to the forest. The prospect of permanently living as a small minority among Javanese and Balinese transmigrants was declined right from the beginning. They would rather stay in the logged-over forest and continue their familiar way of life under changing conditions. There they could hold on to their cultural customs and practices in order to maintain their social identity and keep a safe distance from outsiders (Persoon 1994, Sager 2008).

Originally the area was covered with a dense tropical lowland rainforest with a relatively sparse Malay population concentrated along the banks of the major rivers and living from extensive forms of agriculture and a little bit of fisheries. In addition to growing upland rice for subsistence, the Malay people were also engaged in small rubber plantations as soon as this crop started to become popular in this part of Sumatra which was in the first half of the 20th century (Zendgraaf and Goudoever 1947). The Orang Rimba lived in scattered places in the extensive forests. In the course of history, and usually in the wake of logging operations often followed by conversion processes into a wide range of other types of land use, waves of official transmigrants as well as so-called spontaneous migrants in search of arable land came to this part of Sumatra. In some sub-districts (*kecamatan*) the population more than doubled between 1980 and 2000 (BPS 2000). Transmigrants occupied officially allocated land while the spontaneous migrants looked for land in logged-over forest, usually close to any kind of road to make sure that their harvests could be taken to the market by small trucks.

Crucial for the development in this area in later years were decisions about the road infrastructure taken in the period before World War II. The colonial government decided that roads needed to be built to connect the relatively small settlements in the area in order to be less dependent on riverine transport. Roads were also being built to connect the isolated Kerinci Valley in the highlands of the Bukit Barisan mountain range with the lowlands, important for the export of vegetables and potatoes. Many years later these roads would play a determining role in deciding on the trajectory of the Trans Sumatra Highway and its connecting road webs. The Trans Sumatra Highway, connecting the most northern tip of Sumatra with the most southern part, had been planned for a long time but its actual construction through the sparsely populated lowland areas of Central Sumatra, would only start in the late 1970 and early 1980s. This happened often in combination with the planning of transmigration sites and the establishment of plantations. This highway, mainly running in north-south direction, had to cross many rivers which mainly

FIGURE 5 *The Department of Social Affairs constructed the resettlement village Pulau Kidah near Sarolangun in an effort to persuade the Orang Rimba to adopt a sedentary lifestyle. Some Orang Rimba showed up in the village during initial handouts of food and other gifts. They never occupied the houses in order to actually live there (Pulau Kidah, 1985) (© G.A. Persoon)*

ran from the western to the eastern part of Sumatra. Bridges connecting the banks of these wide rivers had to be constructed in order to replace the slow rafts which were used to take cars, buses and people from the river bank on the one side of the river to the other side. Along the roads small settlements started to grow rapidly as trading posts, bus terminals and administrative centres. Thousands of transmigrants were moved from various parts of Java and Bali to the cleared and newly developed sites. Collectively they started to 'domesticate' the wilderness and turn it into a varied landscape with settlements, agricultural fields, and rubber plantations. Many of the people were also employed in the industrial complexes like the plants for processing palm oil and the large saw-mills. In the long run their population numbers increased enormously which called for the construction and growth of improved infrastructure, community facilities and services in terms of education, and health care (Persoon and Cleuren 2002).

The impact of logging operations on the Orang Rimba

It is difficult to attribute the social changes in the life of the Orang Rimba in an area like Jambi specifically to the logging operations alone. In most cases the process of cutting the trees and the extraction of the logs is only a temporary activity which is followed by a whole range of other types of actions which often lead to very diversified types of land use and thereby also offer new challenges and opportunities to the people involved. Therefore, the impact of logging operations has to be seen over a longer period of time and in the context of the follow-up activities after the initial cutting of the trees. In some cases, if the forest is classified as (limited) production forest, the harvesting of selected trees should be followed by a relatively long period of inactivity in the forest to allow the remaining trees to keep on growing until a second harvest can be planned. This second harvest should not take place before another 20 or 25 years. In the meantime, however, it is common all over Indonesia that illegal logging in these classified 'production forests' further reduces the forest's regrowth (Dudley 2001, Obidzinski 2003, FAO/UNEP 2020).

Encroachment of spontaneous migrants into logged-over forests is also quite common, because for them they are believed to be 'empty lands' (*tanah kosong*), ready for taking. In most cases logging only constitutes the very first step in the conversion process which is followed by clear cutting, which implies the removal of all remaining trees once the commercial ones have been harvested. In the past these remaining trees and vegetation debris used to be burned but as a result of the massive forest fires in 1997/1998 new policies were issued which forbade the use of fire in this form of forest clearing (Glover and Jessup 1997). Bulldozers are used to make big piles of tree trunks, branches, and roots, left to wither gradually, while the forest floor is prepared for the planting of oil palms or rubber trees. This does not mean however that fire is not used anymore as an instrument for clearing the forest floor. Compliance with these policies may be limited as is evident from the yearly occurrence of forest fires in this area.

FIGURE 6 *The denuded forest landscape north of the Bukit Duabelas National Park is prepared for industrial crops like rubber and palm oil (2013) (© G.A. Persoon)*

Depending on the type of land use that is created after the logging operations, the Orang Rimba are faced with the challenge to survive in the strongly modified landscape. Transmigration sites, including the land holdings of a few hectares for each of the farmers, usually does not offer any opportunity for the Orang Rimba because of its intensive form of land-use by the transmigrants and their families. Rubber and palm oil plantations in particular, however, do have certain characteristics that allow Orang Rimba to hunt for animals. In particular wild pigs (*Sus scrofa*) thrive in productive oil palm plantations by foraging on the fallen fruits, which makes pig hunting quite effective in these plantations. With the expansion of the oil palm plantations this Eurasian wild pig has reduced the territory of the much appreciated bearded pigs (*Sus barbatus*), that used to roam around in the dense lowland forests (Meijaard *et al*. 2005).

In the meantime, the Orang Rimba have not been passively waiting for opportunities that were unlikely to come. In that sense the concept of 'impact' which seems to suggest a simple causal relation between a particular cause (logging) and its effects is far more complex in terms of the range of reactions it generates. In this process it also includes the way the people perceive the landscape changes and how they define their options to create another type of future. In the early years of large-scale logging they certainly had an inclination to retreat deeper into the forest. But as the forest became smaller, they were forced to change that reaction. Gradually many of them have learned that one of best ways to overcome the fate to lose all their traditional resources, was to start agricultural activities themselves, mainly in the form of rubber gardens as this crop has a number of advantages over other types of tree crops. The latex does not easily rot and can be kept for some time before it is sold, when prices are higher. At the same time, by starting small-scale rubber gardens they could claim ownership of the land by means of the investments that they have made.

Overlooking the present situation with regards to the Orang Rimba in the central part of Sumatra it is possible to differentiate between various groups on the basis of their dominant way of life which is often also indicative of the type of settlement in which they live and their relation with the outside world. Elkholy summarizes this variation: "… *the great breadth of cultural diversity among the Orang Rimba populations is a direct byproduct of the wider sociopolitical milieu in which these groups have found themselves operating and evolving. As local realities on the ground differ across field sites, so too do those cosmological perceptions that are brought to bear in the problems of existence*." (Elkholy 2016: 193).

In other words, it is possible to sketch the level of intracultural variation among the present-day Orang Rimba living in Jambi Province. This differentiation can be understood as

FIGURE 7 *Sacks full of damar, collected from tree roots and trunks, are ready to be picked up near Sungai Terab. The damar is the last NTFP resource from the area that was once covered by dense rainforest that could be collected by the Orang Rimba (Sungai Terap, 2013) (© G.A. Persoon)*

the long-term result of the impact of logging operations in combination with the cumulative effects of all the activities that were undertaken by a wide range of actors to transform the forest landscape into highly diverse types of land use, and the ways the Orang Rimba have reacted towards these challenges and opportunities. These include the actions undertaken by individuals, agencies and organizations, that have become concerned with the Orang Rimba as a result of the deplorable situation that was created by the logging operations. For these well-intentioned individuals and organizations the situation of the Orang Rimba was not a minor or a side-problem as it was for the logging companies. A number of environmental and Indigenous rights' organizations and also some missionary agencies have started activities to improve the fate of the Orang Rimba that often described them as being the 'victims' or facing misery, sickness and possibly even death. An increase in internal conflicts has also been reported as a result of external interventions, including both the logging operations as well as the well-intentioned type of activities (Prasetijo 2015, 2017 and 2021, Klaver *et al*. 2015, Henschke 2017). Another initiative that should be mentioned in this context was the start of educational activities through the founding of the 'jungle school' (*sokolah rimba*) for small groups of Orang Rimba children by B. Manurung (WARSI 2014, Manurung 2007 and 2019).

This intra-cultural diversity among the Orang Rimba can be described in terms of a number of types of settlements in relation to their livelihoods.

1. In the central part of Jambi, in the area around the Bukit Duabelas National Park, there are still some groups of Orang Rimba who live in relatively intact forest. This environment enables them to continue to practice hunting and gathering in the way they were used to in the past. Their dwellings are either lean-to's or huts a little elevated from the forest floor. In addition to their hunting and gathering activities for their own subsistence they exchange non-timber forests products with the neighbouring villagers. Or they go to the weekly market to buy the goods they need. Even though the Bukit Duabelas area has the status of a national park the Orang Rimba are allowed to continue to live inside the park by the Forest Department. This decision was already taken more than 20 years ago when the government labelled this area in addition to its national park status as a 'cultural reserve' (*cagar budaya*) for the traditional lifestyle of the Orang Rimba.

2. Some groups have made up their mind and decided that the traditional way of life is either not possible anymore or not the best option for them in the future. They have opted for a change in their livelihood and that is to engage in agricultural activities. The cultivation of rubber trees suits them best. They have established rubber gardens in part of the forest that was already cut by the logging companies but that was not immediately turned into large scale plantations. They themselves have cut the remaining trees after which they planted seedlings of rubber trees on the cleared forest floor. This process has started about 15 or 20 years ago, so these rubber trees have been in full production already for a number of years. With the income generated from the latex they have been able to buy mobile phones, motor bikes and chain saws in addition to food and other products. They have made little investments in their dwelling places. Their settlements still resemble the former types of settlements. Their huts are still relatively simple and the settlements are small and look very much like the traditional Orang Rimba settlements. Their modes of subsistence have changed, however, and the amount of material possessions has increased substantially as a result of this new source of income. In addition to rubber tapping, they are still engaged in hunting, gathering and fishing activities.

3. Some groups survive in the middle of large-scale oil palm plantations. In this area the company PT Sari Aditya Loka (PT. SAL) manages the plantations and processes the fruits in a huge factory. It is a branch of the giant Indonesian plantation company, Astra Agro Lestari Tbk. On a regular basis the headmen of the Orang Rimba receive some money from the plantation companies for the fact that the companies have occupied the traditional territory of the Orang Rimba. As wild pigs do relatively well in the oil palm plantations, the hunting of these animals provides the major source of protein. The wild pigs forage on the fallen or harvested nuts from the oil palms. As such they cause damage to the plantation owners who welcome the hunting activities of the Orang Rimba. The

MAP 3 *Land cover map of Bukit Duabelas National Park and its surroundings. Types of land cover a range from moderately dense forest, to low dense forest, mixed agriculture and secondary forest. It also indicates where local communities have their forest fields (*perlandangan masyarakat*) and which areas are covered by plantations (*perkebunan*) and transmigration sites (*transmigrasi*). Logging activities (*aktivitas perbalokan*) are indicated on the map as well (WARSI, 2002). The map clearly indicates that only a small portion of the Bukit Duabelas National Park is still covered by relatively intact forest*

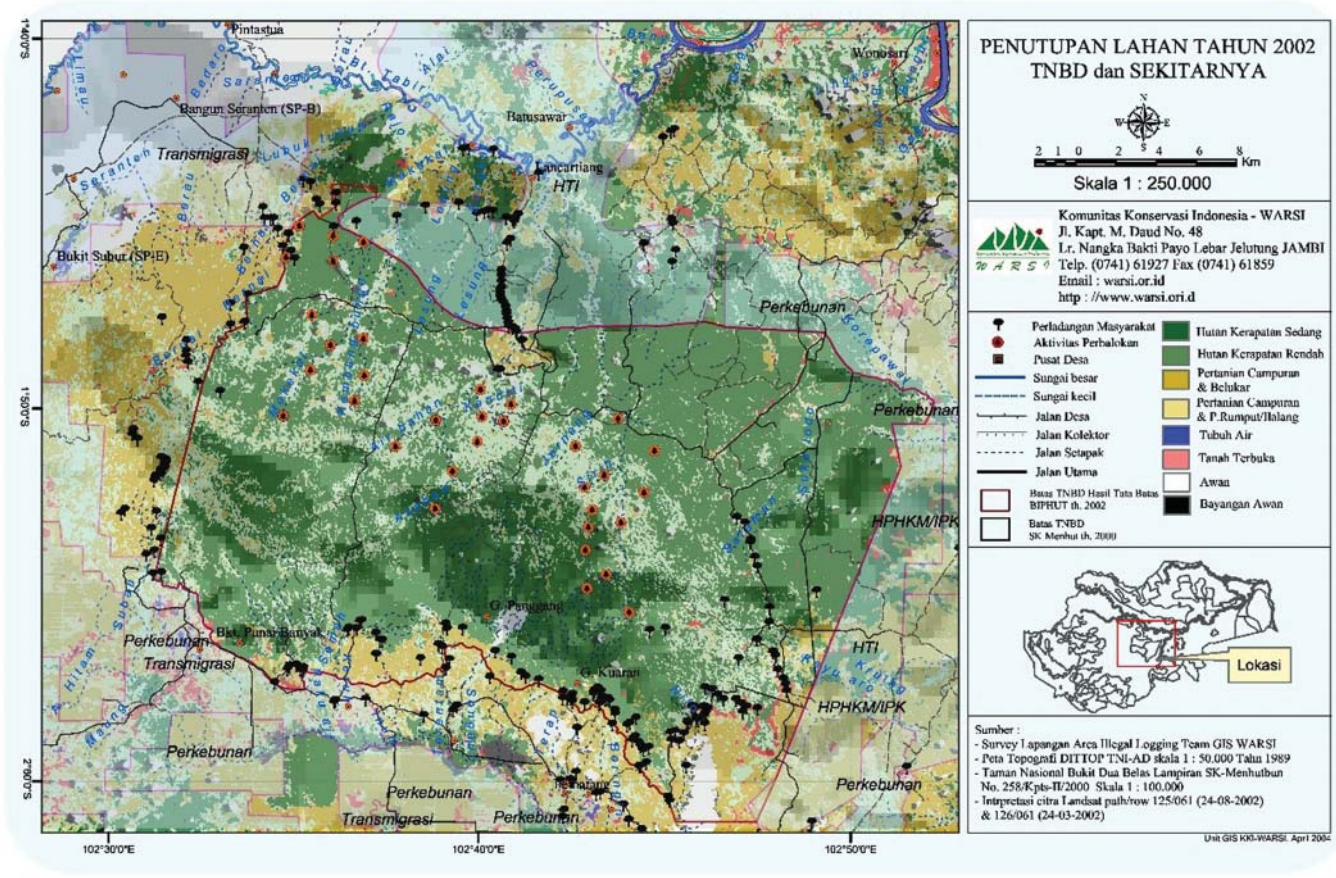


FIGURE 8 *An Orang Rimba man takes his possessions from his shelter while moving to a new location inside the Bukit Duabelas National Park. This area has also been designated as a 'cultural park' (*cagar budaya*) (Bukit Duabelas, 2002) (© G.A. Persoon)*

cash income allows the people to buy various kinds of food products from the company stores or from the village markets (Wardani 2022).

4. In the course of many years a large part of the forest near the villages of the Malay people have been converted into a kind of agroforest with rubber gardens and forest gardens with a large variety of fruit trees such as durian, jackfruit, *rambutan* and banana's. The zones with these extensive mixed gardens are also attractive for wildlife. Wild pigs, deer, monkeys, birds and all kinds of rodents find their way to these gardens where they are considered a pest. As the consumption of many of these animals is forbidden for the Malay people, all of whom adhere Islam, the Orang Rimba are welcome to hunt these animals in order to reduce the damage done to the crops. This form of 'garden hunting' is beneficial to both the Orang Rimba as well as the Malay people and that is one of the reasons why the Malay people do not mind if some Orang Rimba people settle in the agroforestry zone of the forest.[3]

[3] The term 'garden hunting' was introduced by Linares in an article published in 1976, using archaeological field data from a number of South and Central American sites. In this article the author compares animal biomass under natural and under gardening conditions, in particular shifting cultivation practices with roots crops. It turns out that quite a number of animals do quite well under such gardening conditions, which makes 'garden hunting' also quite effective (Linares 1976).

FIGURE 9 *A woman cutting the bark of a rubber tree to tap the latex in Tanah Garo. The cultivation of rubber allows the Orang Rimba to claim land and to earn a cash income because traditional forest resources are no longer available (Tanah Garo, 2013) (© G.A. Persoon)*

5. As a result of missionary activities by Christian churches such as the HKBP (Huria Kristen Batak Protestan or the Batak Christian Protestant Church) and the GKPI (Gereja Kristen Protestan Indonesia or the Indonesian Christian Protestant Church) a small number of Christian Orang Rimba enclaves have been formed in a predominantly Muslim Malay environment. These small enclaves are maintained through the input of aid products and the attention that is given to the converts by the Protestant churches mainly from North Sumatra, which in their turn are often supported, financially and otherwise, again by international missionary organisations. In many ways these Orang Rimba have adapted to a more modern lifestyle in the sense of becoming less dependent on hunting and gathering and relying more on agricultural activities but at the same time they are not fully integrated into the Malay society because of their different religion. A social distance with the Malay villages is maintained.

6. The conversion process to Islam is different. Adherence of this religion brings the Orang Rimba closer to their Malay neighbours. In the context of the resettlement programme and other forms of governmental interference, Islamic missionary

FIGURE 10 *A woman with her children along a road in an oil palm plantation in Sungai Terab, north of the national park. Surviving in such an area requires enormous adaptations for the Orang Rimba (Sungai Terap, 2013) (© G.A. Persoon)*

FIGURE 11 *Boys returning from a visit to the market in the Malay village Jernih along the Air Hitam river. A motorbike, bought with money earned from selling rubber latex, is a useful means of transport to travel in the area (Jernih, 2013) (© G.A. Persoon)*

activities have been undertaken among the Orang Rimba. Because of the predominantly Islamic population in Jambi, promotion of this religion is almost implicit in all kinds of governmental policies and activities. One of the Orang Rimba leaders, *temenggung* Tarib, who has officially been invited to Jakarta a couple of times to be awarded prizes, converted to Islam a number of years ago. It was hoped that by having a role model, his fellow Orang Rimba would follow soon.

This did not happen at a large scale, but recently the Islamic missionary activities (*dakwah*) have intensified and they have become more aggressive.[4] In a recent article of one of the country's leading newspapers it was argued that the conversion was the last option for some of the Orang Rimba as their homelands were completely devastated. By becoming Muslims they would receive more government attention and it would be easier for them to integrate into the mainstream Indonesian society (Jakarta Post 2017). Though it is claimed that this conversion implies a decisive step to leave behind their familiar lifestyle, it is hard to imagine that this is actually the case. Adaption to a new lifestyle, including getting used to houses, to new types of food, while swearing off others, and to ways of living in close interaction with the Malay people, requires a transition that cannot actually happen overnight (Henschke 2017, Manurung 2019). Moreover, the prejudices of the Malay people towards the Orang Rimba do not easy fade away.

7. A small number of people make a living along the highway and on bus terminals and gasoline stations by either begging or selling forest products and medicinal plants. These people have either lost access to their forest land or they have experienced that this modified way of 'hunting and gathering' turns out to be successful at least to some extent. Orang Rimba beggars sometimes featured in the Indonesian press as the ultimate result of forest loss and lack of alternatives. At the large bus terminals along the Trans Sumatra Highway with some big restaurants serving Indonesian style 'fast food'[5], collecting some food or money is apparently an option for some Orang Rimba. They may hang around these locations during part of the day before returning to their huts inside the degraded forest or in the plantation areas.

This variation in types of livelihoods and settlement in relation to their livelihoods or way of life of the Orang Rimba should not be taken to be very rigid or permanent in nature. It is possible for people to change or move away from one group or merge with relatives in another group. Or members of a particular group may combine two or more of these types of livelihoods. The overview's main purpose is to show the diversity of the ways that the Orang Rimba make a living in this strongly modified environmental and social landscape in central Sumatra.

A special note should be made of the position of women in these changing situations. As stated before, in the past women were protected from outsiders. The women were kept away from interaction with strangers and men who were not close relatives. Trade relations and contacts with government officials were exclusively done by the Orang Rimba men. The same would apply for contacts with representatives of NGOs, journalists or researchers, and workers of logging or palm oil companies.

FIGURE 12 *Selling medicinal plants and/or begging for money on a bus terminal along the Trans Sumatra Highway (Bangko, 2002) (© G.A. Persoon)*

To a large extent this level of shyness still prevails and many of the traditional taboos are still applied. But, because of the higher population density in the area, the increased number of settlements, the housing complexes for the work force of logging and other companies, the chance of meeting 'strangers' has also increased. In some areas Orang Rimba women actually visit weekly markets in the Malay villages along the Air Hitam river. When they do so they will always be accompanied by other family members. The room to move for them beyond a relatively small area is still limited (see also Elkholy 2001).

In spite of the increased interaction with various groups of outsiders, it is noteworthy that one type of outsider has not yet 'discovered' the Orang Rimba, and that is the tourist looking for exotic Indigenous people. Many Indigenous communities in Indonesia have recently experienced the rise of 'cultural tourism' aimed at colourful ethic communities, like the Baduy, the Mentawaians, the Ngaju Dayak, the Toraja and many others. It is also unlikely that the Orang Rimba would welcome this kind of outside interest. In addition, there is no infrastructure for 'jungle tracking' and the absence of visually photogenic rituals or cultural objects explains this lack of interest of this group of outsiders.

[4] Various Islamic organisations in Indonesia have quite aggressive missionary practices among the country's Indigenous peoples, such as the Orang Rimba, as well as among adherents of other religions (see for instance Henschke 2017 and Suryani 2021). One of these organisations, *Front Pembela Islam* (or Islamic Defenders Front) has officially been banned by the government in December 2020 because of their violent practices and threats of the public order. This and other Islamic missionary organizations are strongly opposed some recently issued regulations of the Indonesian government which allow for a more tolerant attitude towards the country's 'Indigenous religions' (*agama asli*) (Suryani 2021).

[5] In *Rumah Makan Padang* restaurants food with many kinds of meat, fish and vegetables is put on the table as soon as guests arrive. Most dishes are cold but the served rice is always hot. The guests only pay for the food from dishes they have actually used. The rest is brought back to the kitchen. These kinds of restaurants which are based on the cuisine of the Minangkabau, the dominant people of West Sumatra (of which Padang is the provincial capital).

DISCUSSION AND CONCLUSION

It is clear from historical accounts that the Orang Rimba have a long tradition of adaptation to changing conditions. They have reacted towards challenges and opportunities that were created by the interaction with outsiders. In the past they have more intensively become involved in exchange relations and they have adopted material objects, like ironware, including the shotgun (*kecepek*), cloths, plastic containers and plastic sheets for roofing purposes, and all kinds of new food stuffs (canned fish, sugar etc.). In that sense their culture has not been 'static'. But there can be no doubt that the scope of the challenges and opportunities has dramatically increased in the past few decades. A diachronic perspective over a longer period of time can modify the impression of the initial state of affairs. The main message of the first substantial reports about the Orang Rimba after the start of the massive scale of logging operations in the 1970s, was one that was similar with that of forest dwelling communities in other countries. They were mainly pictured as 'victims' of forest destruction and in many cases words like 'deculturation', 'tribal extinction' were often used to describe their inevitable fate. Their projected futures were very bleak. A diachronic perspective over a number of decades however has highlighted that, in spite of the continuation and even intensification of the logging operations and including the rigorous transformation of the landscape, the Orang Rimba have proved to be much more resilient than initially expected. The same conclusion has also been drawn for other forest-dwelling communities in similar conditions (Bahuchet *et al*. 2001, Minter 2010, Endicott 2016). They turned out to be resilient in coping with the challenges imposed upon them by the changing conditions. Though they could certainly be described as victims of the dramatic degradation of the forests, they simply had to cope with the changing situation. Being 'victims' is only one aspect of their position, referring in particular to the early phase of the operations.

One striking aspect of the distribution of the Orang Rimba in the central part of Sumatra and comparing it with a number of decades ago (or even longer), is the relatively high degree of permanency of the locations where the Orang Rimba live or move around. From one perspective one would have expected a retreat of Orang Rimba towards relatively intact forest or into protected areas like the Bukit Duabelas (Jambi) and the Bukit Tiga Puluh (Riau) national parks. However, this has not happened. To a large extent the groups of Orang Rimba that were described in the 1970s or earlier as groups living within particular watersheds of the rivers like Air Hitam, Kejasung and Mengkakal are still to be found within those areas (compare Departemen Sosial 1974, Wardani 2022, and various maps published by WARSI). This is remarkable because the landscapes have in most cases been dramatically modified by processes of conversion (establishment of plantations, large palm oil processing plants, or transmigration sites). And yet, in most cases the Air Hitam, Kejasung, Mengkakal and other groups are still to be found in their original home areas, living a radically changed life. This raises the question, following Vayda and Walters' suggestion, why the Orang Rimba did not flee towards the remaining forest patches and merge with other groups who were still living in relatively intact forests.

It is difficult to provide an answer to this question but part of the explanation may be related to the strong coherence of the individual groups based on close kinship relations. Each group has its own territory within a particular watershed. This fact apparently does not facilitate the easy fusion of the groups across these traditional boundaries in spite of the changing resources available which force them to radically modify their mode of living. Another reason is the strong attachment to the land itself and the way access to the land and its resources is defined within and between the groups. The mobility of the Orang Rimba is smaller than what one would expect from hunter-gatherers who were always described as being 'nomadic'. It appears that the room to move has clear boundaries that still largely overlaps with traditional watershed territories. It would be interesting to compare whether other groups of (former) hunter-gatherers, such as the Batek in peninsular Malaysia, the Penan in Borneo or the Agta in the Philippines, under similar circumstances show the same kind of persistency in holding on to the traditional boundaries of their territories or whether they are more inclined to merge with other groups living in better conditions, and be accepted by them (see for instance Minter, 2010, and Lye Tuck-Po 2018).

It has been about fifty years since large scale logging operations started to take off in the lowland rainforests in the central part of Sumatra. Compared to the logging and to a smaller extent also mining activities which started in colonial times and the early decades of Indonesian independence, the scale of the activities has intensified enormously. The logging operations were followed by a whole range of other interventions that made use of the opening of the forests through the logging roads and the infrastructure that was slowly developed. Areas designated as conversion areas in the national and provincial spatial planning were converted into plantations for industrial crops or into transmigration sites. The influx of the workforce, the arrival of tens of thousands of transmigrants and spontaneous migrants looking for arable land in the logged-over forests has led to a rapid increase in the population. The Orang Rimba, as the traditional inhabitants of the area, had to cope with the changing landscape and the increased interaction with the newcomers. In addition to the impact of all the activities that were primarily focused on the natural resources, the Orang Rimba themselves also became a target population of various governmental agencies and missionary groups in an effort to bring 'civilization and development' to them. The combined direct and indirect impact of all these interventions has generated a diversity of changes in the lifestyles of the Orang Rimba. Groups of Orang Rimba have reacted towards these changes in various ways which explain the diversity of lifestyles. Specific environmental conditions and individual choices of Orang Rimba men and women have contributed to this diversity. As a reaction, the people developed coping strategies, applying their traditional skills and knowledge but also their creativity in finding new ways to deal with the challenges and hardships imposed upon them. In this way they were able to overcome

the fate of just becoming the victims of the interventions, and redefine their identity as Orang Rimba. To a considerable extent these reactions and strategies were also shaped and influenced by activist researchers and members of NGOs (Manurung 2007, Sulistiya *et al*. 2007, Suryani 2021 and Arizona 2022), who were often inspired by the international discourse on the rights of Indigenous peoples. Slowly, the fruits of this discourse also trickled down in Indonesia not only through a number of governmental decisions and adaptations of policies in terms of cultural and religious rights but also in terms of land right policies which are slowly being implemented. Use of public media, nominations for national environmental awards and other types of support for the Orang Rimba, leading to a higher level of resilience, were undoubtedly generated on the basis of initiatives by these outsiders.

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REFERENCES

ARIZONA, Y. 2022. *Rethinking adat strategies. The politics of state recognition of customary land rights in Indonesia.* Leiden, PhD dissertation.

BAHUCHET, S., GRENAUD, F., GRENAUD, P., and DE MARET, P. 2001. *Tropical forests, human forests. An overview*. Brussels, APFT (Programme Avenir des Peuples des Forêts Tropicales).

BOOMGAARD, P., HENLEY, D., and OSSEWEIJER, M. (eds.) 2005. *Muddied Water. Historical and contemporary perspectives on management of forests and fisheries in island Southeast Asia.* Leiden, KITLV Press.

BROSIUS, J.P. 2008. 'Green dots, pink hearts: displacing politics from the Malaysian rain forest'. In: M.R. DOVE and C. CARPENTER 2008. *Environmental anthropology, a historical reader.* Oxford, Blackwell Publishing.

CAIRNS, M.F. (ed.) 2015. *Shifting cultivation and environmental change. Indigenous peoples, agriculture and forest conservation*. Abingdon, Routledge.

CHARTERS. C., and STAVENHAGEN, R. (eds.) 2009. *Making the Declaration Work. The United Nations Declaration on the Rights of Indigenous Peoples*. Copenhagen, IWGIA.

DAVIS, S. 1977. *Victims of the Miracle. Development and the Indians of Brazil*. London, Cambridge University Press.

DEPARTEMEN SOSIAL. 1973. *Laporan survey Suku Anak Dalam di Air Hitam, Kec. Mersam, Kab. Batang Hari*. Jakarta, Departemen Sosial.

DEPARTEMEN SOSIAL. 1974. *Laporan survey Suku Anak Dalam di Kejasung, Kec. Mersam, Kab. Batang Hari*. Jakarta, Departement Sosial.

DEPARTEMEN SOSIAL. 1976. *Laporan survey terbatas calon lokasi proyek dan kelompok masyarakat Suku Anak Dalam dipegambiran dan sekitarnya, kecamatan Tebo Ilir, kabupaten Bungo Tebo*. Jakarta, Departemen Social.

DEPARTEMEN SOSIAL. 1985. *Pembinaan kesejahteraan masyarakat terasing*. Jambi, Departemen Sosial.

DEPARTEMEN SOSIAL. 2004. Atlas nasional persebaran komunitas adat terpencil. Jakarta, Departemen Sosial.

van DONGEN, C.J. 1906. 'Bijdrage tot de kennis van Ridan-Koeboes'. In: *Tijdschrift voor het Binnenlandsch Bestuur* **30**(1–6): 225–253.

van DONGEN, C.J. 1910. 'De Koeboes in de onderafdeeling Koeboestreken der Residentie Palembang'. In: *Bijdragen tot de Taal-, Land- en Volkenkunde* **63**(3–4): 181–296.

DUDLEY, R.G. 2001. 'Dynamics of Illegal Logging in Indonesia'. In: C.J. PIERCE COLFER, IA.P. RESOSUDARMO (eds.) *Which Way Forward? People, Forests, and Policymakers in Indonesia,* pp. 358–382. Washington, Resources for the Future Press.

THE ECOLOGIST. 1985. *Banking on Disaster. Indonesia's Transmigration Programme* 16. Special Issue of *The Ecologist*.

EDER, J.F. 1987. *On the Road to Tribal Extinction. Depopulation, Deculturation, and Adaptive Well-being among the Batak of the Philippines*. Berkeley, University of California Press.

ENDICOTT, K. (ed.) 2016 *Malaysia's original people. Past, present and future of the Orang Asli. Singapore*, National University of Singapore.

ELKHOLY, R. 2001. 'The Indigenous Orang Rimba Forest People'. In: R.T. Francoeur and R.J. Noonan (eds.) *The International Encyclopedia of Sexuality*, pp. 544–550. New York, Continuum.

ELKHOLY, R. 2016. *Being and Becoming. Embodiment and Experience among the Orang Rimba of Sumatra*. New York, Berghahn Books.

FAO. 1999. *Road Infrastructure in Tropical Forests. Road to Development or Road to Destruction?* Rome, FAO.

FAO and UNEP. 2020. *The State of the World's Forests 2020. Forests, Biodiversity and People*. Rome, FAO.

FWI/GFW. (Forest Watch Indonesia and Global Forest Watch) 2002. *The State of the Forest: Indonesia.* Bogor/Washington, FWI/GFW.

GABOR, J.D., and PRONK, J. 1991. *Regeringsstandpunt Tropisch Regenwoud*. Den Haag, Staatsdrukkerij.

GLOVER, D., and JESSUP, T. (eds.) 1997. *Indonesia's Fires and Haze. The Cost of Catastrophe*. Singapore, ISEAS.

HAGEN, B. 1908. *Die Orang Kubu auf Sumatra*. Frankfurt am Main, J. Baer & Co.

HENSCHKE, R. 2017. '*Indonesia's Orang Rimba: Forced to renounce their faith'*. BBC News https://www.bbc.com/news/world-asia-41981430.

HIDAYAH, Z. 2020. *A guide to tribes in Indonesia. Anthropological insights from the archipelago*. Singapore, Springer.

JAKARTA POST. 2017. *As homelands devastated, Indonesian tribe turns to Islam*. Jakarta Post, 16 June 2017.

KEEREWEER, H.H. 1940. 'De Koeboes in de onderafdeeling Moesi-Ilir en Koeboestreken. In: *Bijdragen tot de Taal-, Land- en Volkenkunde* **99**(3): 357–396.

LAURANCE, W.L., GOOSEM, M., and LAURANCE, S.G.W. 2009. 'Impacts of Roads and Linear Clearings on Tropical Forests'. In: *Trends in Ecology and Evolution* **24**(12): 659–669.

LINARES, O.F. 1976. 'Garden hunting in the American Tropics'. In: *Human Ecology* **4**(4): 331–349.

LOEB, E.M. 1974, org. 1935. *Sumatra. Its history and people*. London, Oxford University Press.

LYE, TUCK-PO. 2018. *Changing pathways. Forest degradation and the Batek of Pahang, Malaysia*. Petaling Jaya, SIRD.

MANSER, B. 1996. *Voices from the Rainforest. Testimonies of a Threatened People*. Pelating Jaya, Bruno Manser Foundation and INSAN.

MANURUNG, B. 2007. *Sokola Rimba. Pengalaman Belajar Bersama Orang Rimba*. Yogyakarta, INSISTPress.

MARZALI, A. 2018. *Orang Rimba, Orang Batin, dan Orang Melayu*. Paper presented at 3rd International Seminar on 'Preserving Melayu Culture for Indonesia Integrity', 3 December 2018 at Universitas Jambi Mendalo, Jambi.

MEIJAARD, E., SHEIL, D., NASI, R., AUGERI, D., ROSENBAUM, B., ISKANDAR, D., SETYAWATI, T., LAMMERTINK, M., RACHMATIKA, I., WONG, A., SOEHARTONO, T., STANLEY, S., and O'BRIEN, T. 2005. *Life after logging. Reconciling wildlife conservation and production forestry in Indonesian Borneo*. Bogor, CIFOR.

MINTER, T. 2010. *The Agta of the Northern Sierra Madre. Livelihood Strategies and Resilience among Philippine hunter-gatherers*. Leiden, PhD dissertation.

OBIDZINSKI, K. 2001. *Logging in East Kalimantan. The Historical Expedience of Illegality*. Wageningen, PhD dissertation.

PERSOON, G.A. 1994. *Vluchten of Veranderen. Processen van verandering en Ontwikkeling bij Tribale groepen in Indonesië*. Leiden, PhD dissertation.

PERSOON, G.A., and CLEUREN, H. 2002. 'A boomtown in 'empty land'. Bangko (Jambi) at the forest frontier'. In: P.J.M. NAS (ed.) *The Indonesian town revisited*, pp. 259–282. Münster, LIT Verlag.

PERSOON, G.A., and WARDANI, E.M. 2017. 'Projected Futures of the Orang Rimba of Sumatra (Indonesia)'. In: M.M. CASTILLO and A. STRECKER (eds.) *Heritage and Rights of Indigenous Peoples*. Archaeological Studies Leiden University 39, pp. 61–76. Leiden, Leiden University Press.

PERSOON, G.A., and WAKKER, E. 2005. 'The forests of Sumatra. Use, conversion and conservation'. In: P. BOOMGAARD, D. HENLEY and M. OSSEWEIJER (eds.) *Muddied Water. Historical and contemporary perspectives on management of forests and fisheries in island Southeast Asia*, pp. 323–350. Leiden, KITLV Press.

PRASETIJO, A. 2011. *Serah jajah dan perlawanan yang tersisia. Etnografi Orang Rimba di Jambi.* Jakarta, Wedatama Widya Sastra.

PRASETIJO, A. 2015. *Orang Rimba. True Custodians of the Forest. Alternative Strategies and Actions in Social Movement Against Hegemony*. Jakarta/Jambi, ICSD and KKI Warsi.

PRASETIJO, A. 2017. 'Livelihood Transformations of the Orang Rimba as Tacit Resistance in the Context of Deforestation'. *Endogami: Jurnal Ilmiah Kajian Antropologi* 1(1): 1–13, Dec. 2017. https://doi.org/10.14710/endogami.1.1.1-13

PRASETIJO, A. 2021. 'Displacement as Experienced by the Orang Rimba Huntergatherers'. In: Senri Ethnological Studies 106, pp. 235–252.

ROMBOUTS, S.J. 2014. *Having a Say. Indigenous Peoples, International Law and Free, Prior and Informed Consent.* Oisterwijk, Wolf Legal Publishers.

SANDBUKT, O. 1988. 'Resource Constraints and Relations of Appropriation among Tropical Foragers: the Case of the Sumatran Kubu'. In: *Research in Economic Anthropology* **10**: 117-156.

SANDBUKT, O., and H. WIRIADINATA (eds.) 1994. *Rain Forest and Resource Management*. Jakarta. LIPI.

SPONSEL, L.E., HEADLAND, T., and BAILEY, R. (eds.) 1996. *Tropical Deforestation. The Human Dimension*. New York, Columbia University Press.

SULISTIYA, C.K., TRESNO SUMBODO, B., and PARAMITA, S. 2007. *Persepsi dan partisipasi masyarakat lokal terhadap kawasan konservasi di propinsi Jambi*. Yogyakarta, Fakultas Pertanian, Universitas Janabadra.

SURYANI, A. 2021. *From respected hermits to ordinary citizens. The conversion of the Baduy, ethnicity and politics of religion in Indonesia (1977–2019).* Leiden, PhD dissertation.

TEMPO. 1990. 'Kematian di dalam hutan'. *Tempo* 15 December 1990: 22–23.

VAN EERDE, J.C. 1929. 'Onpersoonlijk ruilverkeer in den Indischen Archipel'. In KBGKW (ed.) *Feestbundel uitgegeven door het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen bij Gelegenheid van zijn 150 jarig bestaan (1778–1928)*, part I, pp. 93–119. Weltevreden, G. Kolff & Co.

VAYDA, A.P., and WALTERS, B.B. 2011. 'Introduction: Pragmatic Methods and Causal-History Explanation'. In: A.P. Vayda and B.B. Walters (eds.) *Causal Explanation for Social Scientists*, pp. 1–25. Lanham, AltaMira Press.

VITUG, M.D. 1993. *Power from the Forest. The Politics of Logging*. Manila, Philippine Center for Investigative Journalism.

WARDANI, E.M. 2022. *Food security among the Orang Rimba. Transformation processes among contemporary Indonesian hunter-gatherers.* Leiden, PhD dissertation.

WHITTEN, T., DAMANIK, S.J., ANWAR, J., and HISYAM, N. 2000. *The Ecology of Sumatra.* The Ecology of Indonesia Series, Volume I. Singapore, Periplus.

ZENDGRAAF, H.C., and VAN GOUDOEVER, W.A. 1947. *Sumatraantjes*. 's Gravenhage, W. van Hoeve.