

Indigenous Forest: The Crucial Role Of Dayak Benawan Women's Knowledge In West Kalimantan, Indonesia

Nikodemus Niko^{1*}, Ida Widianingsih², Munandar Sulaeman³,
Muhammad Fedryansyah⁴

¹Faculty of Social and Political Sciences, Universitas Padjadjaran,
Indonesia and Department of Sociology, Faculty of Social and Political
Sciences, Universitas Maritim Raja Ali Haji, Indonesia

²Department of Public Administration, Faculty of Social and
Political Sciences, Universitas Padjadjaran, Indonesia

³Faculty of Animal Husbandry, Universitas
Padjadjaran, Indonesia

⁴Department of Social Welfare, Faculty of Social and Political
Sciences, Universitas Padjadjaran, Indonesia

*Corresponding Email: nikodemus15001@unpad.ac.id

Abstract

This article explores the forest management knowledge of Dayak Benawan women in West Kalimantan, Indonesia. The Dayak Benawan women have an intricate understanding of their surrounding forest and its resources, which they utilize for their livelihoods. However, the rapid pace of development, modernization, and the changing land tenure system, coupled with a lack of recognition of Indigenous knowledge, have jeopardized their traditional forest management practices. This study draws upon ethnography research, to understand the native knowledge and practices of Dayak Benawan women in forest management. The findings suggest that Dayak Benawan women's forest management knowledge is crucial in maintaining the ecological balance and the sustenance of their communities. However, the current development trajectory and policies threaten their livelihoods, the forest ecosystem, and their knowledge. Therefore, the study highlights the need for recognition of Indigenous knowledge, inclusive policy-making, and collaborative approaches in forest management.

Keywords: Community Forest, Indigenous Practices,
Ecological Sustainability.

Introduction

Starting from the 1990s, the Indigenous communities in Southeast Asia have encountered substantial growth in the scale of oil palm plantations (Andrianto, Komarudin, & Pacheco, 2019; Dallinger, 2011; Obidzinski, Andriani, Komarudin, & Andrianto, 2012; Stephenson & Dobson, 2020; Unjan, Nissapa, & Phitthayaphinant, 2013). Within Indonesia, the expansion of oil palm cultivation has been most prominent in Sumatra, Kalimantan, and Papua (Petrenko, Paltseva, & Searle, 2016). In the case of West Kalimantan, Indigenous peoples are confronted with the encroachment of oil palm plantations upon their ancestral forests (Sirait, 2009).

The majority of the Dayak population residing in Sanggau Regency continue to engage in traditional cultivation practices. Nevertheless, a number of cultivators have opted to transition from rice cultivation to growing oil palm in select regions. As modernization continues, the forest areas traditionally owned by the Dayak Benawan community have increasingly come under the control of wealthy individuals who have established oil palm plantations (Niko, 2021). This situation presents a potential threat to the preservation of the cultural heritage of the Dayak Benawan people, as they may face the risk of losing their connection to their ancestral land in the future (Sunkar, Saraswati, & Santosa, 2019).

Indigenous people of Dayak Benawan manage their forest with native knowledge. These systems have proven to be effective in preserving forests and biodiversity, while also providing for the needs of local communities. In recent years, there has been a growing interest in the potential of Indigenous forest management as a tool for sustainable forest management.

One of the key features of Indigenous forest management is the close relationship between Indigenous peoples and the forests they manage. Indigenous peoples have a deep understanding of the ecology of their forests and have developed a range of practices and techniques for managing them sustainably. These practices often involve a combination of traditional knowledge and modern science.

Research has shown that Indigenous forest management can lead to a range of benefits (Widianingsih, McIntyre, Rakasiwi, Iskandar, & Wirawan, 2022; McIntyre et al., 2022). For example, it can contribute to the conservation of biodiversity, the maintenance of ecosystem services, and the mitigation of climate change. Indigenous forest management can also provide economic benefits to local

communities through the sustainable harvesting of forest resources and the development of ecotourism.

The Indigenous communities residing in Sanggau Regency should be acknowledged and safeguarded, as stipulated by the Regional Regulation of Sanggau Regency No. 1/2017, which pertains to the recognition and protection of Indigenous communities. In contrast, the government must still provide concession permits to significant corporations for the establishment of oil palm plantations. Fundamentally, the comprehensive recognition of the rights of Indigenous peoples is aimed at safeguarding the welfare of humans, non-human entities (such as animals and plants), and land (which may include sacred sites) against the negative consequences of industrial capitalism (Tysiachniouk, Henry, Tulaeva, & Horowitz, 2020).

Furthermore, individuals who clear land for the purpose of establishing private oil palm plantations are not required to obtain permission from the government. Consequently, the size of these plantations is not taken into account or recorded in the overall area of oil palm plantations in Sanggau Regency. The existence of such plantations also poses a threat to the survival of local Indigenous peoples' customs and traditional food sources (Fujiwara, 2020; Haug, 2017).

The establishment of oil palm plantations under community ownership does not necessitate government permits. This scenario results in further marginalization of the respective Indigenous communities who have been responsible for maintaining ecological equilibrium. In fact, there is a possibility that they may be displaced and compelled to migrate elsewhere as a result of disruptions to their customs (Sobreiro, 2015). Within the oil palm industry, Indigenous women experience heightened impoverishment and marginalization (Julia & White, 2012). They resort to planting oil palm on their lands as other economic resources become scarce. The Dayak Benawan people possess minimal knowledge and expertise about oil palm plantations and cultivation, which increases the likelihood of failure rather than success.

According to the data provided by Indonesia's Ministry of Environment and Forestry, only ten customary forest locations in West Kalimantan possess official certification. In Sanggau Regency, only two customary forest areas, namely Tae Village in Balai and Sisang Segumon in Sekayam, have been officially recognized. The remaining

customary areas are still categorized as production forests and are managed independently by Indigenous peoples. As a result, these areas are yet to be fully managed by Indigenous peoples due to the lack of legal recognition. Generally, in West Kalimantan, six districts comprise customary territories determined through a Regent's Decree, covering an area of 528,152.82 hectares. In contrast, the area of customary forest designated through the Decree of Indonesia's Minister of Environment and Forestry is 58,237.44 hectares.

However, despite the potential benefits of Indigenous forest management, these systems are often threatened by external pressures. These include deforestation, mining, oil and gas extraction, and large-scale agriculture. In many cases, these pressures are driven by external actors, such as governments or corporations, who do not recognize the value of Indigenous forest management systems.

To address these challenges, there is a growing recognition of the need to support and empower Indigenous peoples in their efforts to manage their forests sustainably. This includes providing support for Indigenous-led conservation initiatives, promoting the recognition of Indigenous rights and traditional knowledge, and developing partnerships between Indigenous communities and other stakeholders.

The existence of Dayak Benawan women plays a crucial role in safeguarding the ancestral forest inherited by the Dayak Benawan community. Despite their simple and traditional way of life, they face various challenges that categorize them as impoverished, with limited access to basic public services, and a low quality of life. Their daily forest activities are an integral part of their cultural heritage. This paper aims to explore how Dayak Benawan women utilize their Indigenous knowledge in forest management.

Method

In this research, the ethnographic approach was employed to explore the crucial role of Dayak Benawan women's knowledge in managing the Indigenous forest in West Kalimantan, Indonesia. Ethnography was used to document the experiences of women and generate knowledge about their culture and the challenges they face. The research aimed to provide a space for women to share and explore their existing knowledge and resources. To collect primary data, the researchers used participant observation, in-depth interviews, and documentary studies. One of the researchers,

who identified as a native Dayak Benawan, lived with the community in Pejalu Sub-Hamlet to gain insider knowledge and fluency in the native language, which allowed for a richer understanding of the knowledge base of the informants.

During the data collection process, the researchers conducted the fieldwork independently, without any assistance from external parties. We utilized several ethnographic techniques, such as participant observation, in-depth interviews, documentation studies, and living with the Dayak Benawan community. The fieldwork was conducted for a period of 11 months, spanning from June 2017 to November 2018 and from November 2019 to February 2020. The study was carried out in Pejalu Sub-Hamlet, Cowet Village, Balai Sub-district, Sanggau District, West Kalimantan Indonesia.

During the fieldwork, the primary objective was to gain an understanding of the thought processes and behaviors of the Dayak Benawan community by participating in their daily activities. This allowed the researcher to document the knowledge of women in their everyday life. Purposive sampling was used to interview 20 native Dayak Benawan informants, as well as the head of Cowet Village. All interviews were conducted in the mother tongue of Dayak Benawan, and each informant's interview took an average of 45-60 minutes in their homes. The interview questions were focused on how their daily activities were connected to nature, and each interview was recorded and transcribed. The researcher, being a native Dayak Benawan, conducted the conversations with the informants in a natural way.

The study emphasizes the importance of treating the subject of research as a whole entity. Before the interview process began, the researcher explained the purpose of the study and assured the subject that their identity would be protected. Informed consent was obtained from each subject, and their real names were used in this study. Ethnographic data analysis was conducted concurrently with the writing of the research report, allowing for data verification at the same time. The primary data sources were used for verification through informant statements, and direct quotes from the informants were cataloged under the relevant themes of their experience and knowledge. Informant triangulation was used as the data validation method.

Findings

Roles of Dayak Benawan Women's Knowledge on Forest Management

1. Forest Classification

Cowet Village is located on Dayak Benawan customary land in Sanggau Regency, West Kalimantan, Indonesia. It covers a total area of 7,269.5 hectares and is situated at an altitude of 2,423.1 ASL. While parts of the village land are used for agriculture, the area is not categorized as a protected forest. This leaves the land vulnerable to political disputes, conflicts of interest, and management practices that may not be supportive of Indigenous peoples. The table below provides an overview of land use in the Cowet Village area.

Table 1. Land use of Cowet Village

No.	Lahan	Luas
1.	Rainfed Rice Fields	115 Ha
2.	Ladang (deret farmland)	371 Ha
3.	Settlements	71 Ha
4.	Garden	828 Ha
5.	Land for Public Facilities	29 Ha
6.	Production Forest	332 Ha
7.	Community Plantation	1.557 Ha
8.	Native Forest	3.966,5

Data from monograph of Cowet Village Office (2020).

The data presented in Table 1 indicates that the individual plantation area in Cowet Village is greater in size than the other land categories. The main crop cultivated on these plantations is rubber, which serves as the primary source of income for the local community. However, there is a lack of available data regarding the size of the community's oil palm plantations.

The classification of farmland is aimed at preventing people from illegally entering the forest to clear fields. Moreover, this land has already been claimed by its rightful owner. The farmland type is located in hilly areas known as "deret" among the Dayak Benawan people, and is considered as part of the forest.

Figure 1. Ladang (deret farmland) of Dayak Benawan People



Indigenous peoples carefully guard and protect forest land that they called *pengarangk tongk*, which is considered an indigenous forest that must not be interfered with. Violations of this forest can lead to customary law sanctions. However, despite the importance of these forests, they have not been recognized as protected areas by the local government. The government has not conducted geographic mapping, nor has it recognized Dayak Benawan customary forests as protected forests. In the past, the area of production forest in Dayak Benawan was much larger. The Dayak Benawan people opened fields, leading to deforestation. Currently, the agriculture system used by the Indigenous peoples is still based on traditional and environmentally friendly methods.

2. Traditional Forest Management Practices

The Dayak Benawan community has a tradition of *motong'k* or tapping rubber trees, and *muat ume'k* or shifting cultivation, which have been vital for their survival and the sustainability of the forest. *Muat ume'k* is an agricultural practice that is still utilized by shifting from one forest land to another within the Dayak Benawan production forest area or their former field areas from decades ago.

The Dayak Benawan community possesses exceptional knowledge about forest management, which is intricately linked to cultural, spiritual, ecological, social, economic, and political components. The community's presence is of utmost significance as they are the primary participants involved in managing the forest and its resources, given their dependency on the forest for subsistence. By transmitting knowledge from one generation to the next,

they have been able to uphold the sustainability of their forest.

The Dayak Benawan community views the forest as a sacred land crucial to their survival and that of their offspring. According to their beliefs, destroying nature is akin to destroying women because women depend on the forest for their livelihood. The knowledge system of Dayak Benawan women is mainly based on their experience with natural phenomena. Johnson suggests that this Indigenous knowledge has been passed down from generation to generation for a long time among certain Indigenous groups who live close to nature (1993). Thus, Indigenous knowledge is highly recommended as a reference for sustainable development, provided that it is inclusive, grounded, and integrated into intervention programs from the outset (Briggs, 2013). The Dayak Benawan Indigenous people have unique knowledge of forest management that is closely linked to cultural, spiritual, ecological, social, economic, and political elements. As they rely on the forest for their livelihood, they are crucial actors in forest management and its contents. With knowledge transmitted through generations, they are capable of maintaining the sustainability of their forest.

Indigenous communities have specific knowledge about farming that is derived from nature, including the appropriate timing for planting rice. According to their knowledge, a suitable day for rice planting is when the moon is visible in the sky, appearing half a blade. Conversely, a full moon or the absence of the moon indicates that planting is not permitted. This Indigenous knowledge is an essential element of the communities' livelihood systems and has been passed down through generations as a way to ensure the sustainability of their farming practices in specific regions (Rajasekaran, Warren, & Babu, 1991).

Living in the forest has become a way of life for the Dayak people, and they have developed a deep respect for nature. However, the accumulation of customary territories during the process of capital accumulation has become a threatening sign for the existence of Indigenous peoples (Bslbach, 1988; Kartawinata, Soedjito, Jessup, Vayda, & Colfer, 1984; Schiller, 2001). This process of capital accumulation is akin to taking over land rights. Government-led special economic projects, conducted in the name of development, have led to the displacement of Indigenous peoples. As a result, their living space to carry out local socio-cultural and economic processes has become increasingly

limited, causing them to become disconnected from the foundation of their knowledge.

3. Factors Affecting Dayak Benawan Women's Forest Management Practices

The Dayak Benawan people possess a wealth of knowledge in managing land and fields, but they are compelled to manage oil palm plantations despite their lack of basic knowledge and experience in this field. The transition from fields to oil palm plantations is also a consequence of the policy of the West Kalimantan provincial government, as specified in Governor Regulation No. 39/2019 on the Prevention and Management of Forest and Land Fires. This policy prohibits any individual or legal entity (company) from clearing land through burning, which has led to the promotion of oil palm plantations as an alternative to traditional farming practices.

The aforementioned policy has a significant impact on the Dayak Benawan community, as they traditionally open new fields through slash-and-burn practices. With this practice now prohibited, the community turns to oil palm plantation as an alternative. However, this expansion has a negative consequence as it leads to a shift from their traditional practice of shifting cultivation, ultimately resulting in a decline in landscape biodiversity.

In the context of land reform, Indigenous communities have experienced marginalization and intercommunal conflicts. This is reflected in the lack of access and control that these communities have over their land, which has resulted in a widening gap between the government and the local population. The marginalization of Indigenous peoples is further compounded by the threat of natural resource depletion, which has become a global phenomenon. The presence of extractive companies and local investors also contributes to the marginalization of the Dayak Benawan women, who are stripped of their traditional work and local knowledge.

The loss of land and resources poses a threat not only to the survival of Indigenous communities but also to their economic security, socio-cultural cohesion, and human dignity (Berger et al., 2020). Women are particularly vulnerable to poverty, violence, and the burden of double work as a result of this situation (Richman, 2002). The situation is exacerbated by the ambitious rhetoric of development actors, who tout the profitability and prosperity

of the oil palm industry and suggest that it will transform families' economic fortunes for the better.

In conversation with Kepala Desa (Head of Village) said that between 2010 and 2011, the village government used oil palm companies to raise awareness among the Cowet Village community of the Dayak Benawan to convert their supposedly unproductive land, including forests and fields, into oil palm plantations. Despite this, most people were not in favor of the idea. Although oil palm companies were on the brink of entering the Dayak Benawan area, they did not proceed due to the considerable opposition, including the firm refusal of Dayak Benawan women to transform their forests into plantations.

According to the findings of the interviews, the Dayak Benawan people are compelled to change the function of their land due to the considerable decline in the value of rubber commodities. Consequently, they have turned to planting oil palm as a means of securing a stable income for the future.

“Aja raga kulat koh. Da mak ribu, kadang sampai tiga ribu mak ratus. Ngak masih kunik mereja, laba ngen nen pencarek anak ka’k kampong ha’k.” Translation: The sap from the results of tapping rubber is very little. Now, it is 5,000 IDR per kilogram and sometimes down to 3,500 IDR per kilogram. However, we have to tap rubber because it is the only source of livelihood in this village (interview MT, a Dayak Benawan woman)

The researchers found instances of some Dayak Benawan families selling their land to non-Indigenous landlords or tengkulak, who acquired land for the purpose of planting oil palms in the Indigenous community's territory. However, the village government has not kept records of the expansion of oil palm plantations in the area, as noted by the head of Cowet Village during the study.

“Kabon sawit wak masarakat ha’k ayek kala desa mendata’wa. Karena laba ngen kan ayek perelu ijin. Ngak ade’k lahan ngan modal, yak morok sawit da kate wan dadep laba ngen. Ayek perelu mai ijin ka’k desa.” Translation: The village government has never recorded the data regarding community-owned oil palm plantations. This is because a permit is not required. In other words, if any community member possesses land and money, she/he may plant oil palm. They do not need to apply for a permit in the village office (in conversation with SL, Head of Cowet Village).

The lands owned by the Dayak Benawan community are in high demand by capital owners due to their relatively low cost and below-market prices. Furthermore, the researchers observed that some Dayak Benawan people have enough capital to convert their fields into oil palm plantations. This shift in farming practices has a negative social impact on the oil palm industry. In order to accommodate these smallholders of oil palm plantations, large companies utilize intermediaries or collectors to purchase Tandan Buah Segar (TBS)/fresh fruit bunches from the Dayak Benawan people.

“Kadang nyek sida panen amper nyek ton timbang kotor. Paling sikit bener lah nyek sida panen ngen rimak ratus kilo. Derepm nyek burant biasa duwek sida panen, biasa ngak inyek sida panen. Ayek ngak nentu.” Translation: A single harvest sometimes is nearly a ton for its gross weight. At least, in one harvest, its gross weight is about five hundred kilos. In a month, it is customary to harvest twice or usually only once. Furthermore, the harvest period is uncertain (in conversation with LS, an owner of an oil palm plantation).

The oil palm plantation presents an opportunity for the Dayak Benawan people to improve their economic condition and overcome household financial difficulties. However, the conversion of their fields to oil palm plantations is increasing without proper training and knowledge of the industry. The Dayak Benawan people rely on self-taught techniques for seed selection, planting, maintenance, and harvesting. Yet, to achieve maximum palm oil yields, periodic maintenance and fertilization are necessary. Unfortunately, due to the high cost of fertilizers, the Dayak Benawan people do not apply intensive fertilization to maintain their plantations. As a result, the oil palm bunches harvested may sometimes be rejected by buyers because of the small fruit size.

The Dayak Benawan's knowledge of owning and maintaining an oil palm plantation is limited to observing successful individuals within their community who have ventured into the industry (Niko, 2020; Niko, 2022). Motivated by the prospects of economic gain, many have converted their rice fields and rubber plantations into oil palm plantations. However, the researchers found that the Dayak Benawan's understanding of oil palm plantation maintenance is insufficient. Despite the fact that regular maintenance and fertilization are essential for achieving

maximum palm oil yields, they tend to self-teach themselves, without seeking specialized training. Moreover, some individuals fertilize their palm trees only once a year, while others do not fertilize their plantation at all, often due to lack of financial resources or insufficient knowledge. These challenges stem from the community's lack of expertise in the industry and the high cost of fertilizers. Nonetheless, due to the long harvest period, they consider the plantation as a promising source of income in the long run.

Figure 2. Nganos; the Dayak Benawan women after tilling the fields



The expansion of local oil palm plantations has resulted in the loss of living spaces. As an illustration, the capitalistic economic system undermines the value of domestic work typically carried out by women, thereby rendering such activities as unproductive. Consequently, women are compelled to seek alternative job opportunities that offer financial rewards, which may entail migrating to other locations to engage in casual labor activities in oil palm plantations.

“Morok sawit ha’k ninget-ninget na da udah nen berasel. Kabon sawit pun ayek ayuk. Kurang labeh lah nyek hektar, mungkin ngaik seratus batang’k kurang labeh lah. Ngen pun yek kala’k na mupuk, raga pupuk mal. Nyek guni pupuk ngen raga nyek sida panen koh.” Translation: Planting oil palm is because I see that many people have been successful. Our oil palm plantations are not large. It is perhaps less than a hectare. It is about one hundred trees or maybe less because the spacing is a bit wide. In addition, it is rarely cared for.

Furthermore, fertilization is also rare because the cost of fertilizer is also expensive. The price of fertilizer is equivalent to the yield of one harvest (in conversation with VS, an owner of an oil palm plantation).

Discussion

According to findings from field studies, the conversion of rubber plantations to oil palm plantations by a small percentage of the Dayak Benawan people has contributed to an increase in oil palm expansion in Sanggau Regency, carried out by both companies and smallholders. This expansion has resulted in an 18% loss of living space for the people of Sanggau Regency over the past 20 years. The displacement of Dayak Benawan traditions is also occurring due to the expansion, particularly impacting women's access to living space. Women are disproportionately impacted by the hierarchy in the oil palm plantation industry. Dayak women in Kalimantan are facing conflict as a result of this massive oil palm expansion, with women often being the primary victims.

In Dayak Benawan culture, women have traditionally carried out a dual workload as both breadwinners and housewives. This double burden is accepted and even encouraged by social norms, and women who do not work in the fields are viewed as unproductive and lazy by the community. The rise of modern patriarchal economies has only intensified this pressure on women to be productive, with the prioritization of productivity above all else. As a result, some of Dayak Benawan women seek out other opportunities for productive work in order to achieve economic stability and social recognition. Unfortunately, their poverty and need for work make them an easily exploitable source of cheap labor for capitalist ventures, such as oil palm companies, which benefit from their energy and labor while paying them low wages. This dynamic is in line with Gans' observation that the poor often facilitate the upward mobility of those in higher social classes, serving as a means of increasing productivity and profit margins for companies (1971).

In the worldview of Dayak women, nature plays a crucial role in sustaining their livelihoods. It provides them with a variety of food sources that they gather and process to support their families and children (Roth, 1892; Zainuri, 2018). However, the introduction of a capitalistic economic system that prioritizes profit over ecological sustainability has made Dayak Benawan women increasingly vulnerable. In

traditional Dayak culture, women have been integral in preserving nature to ensure the survival of their communities. Their Indigenous knowledge and practices have contributed significantly to maintaining biodiversity and building environmental ecosystem resilience in the face of global change (Gómez-Baggethun, Corbera, & Reyes-García, 2013). Unfortunately, the rapid expansion of oil and mining companies in Kalimantan has led to the degradation of natural ecosystems, endangering the lives, cultures, and customs of Indigenous peoples (Brainard, 2011; Elmhirst, Basnett, Siscawati, & Ekowati, 2017; Elmhirst, Siscawati, & Basnett, 2015; Petrenko et al., 2016). This has a serious impact on Dayak Benawan women, as the loss of forest area limits the range of available plant species for their household needs and natural medicine.

Conclusion

The Dayak Benawan women of West Kalimantan, Indonesia play a crucial role in managing and preserving the forest ecosystems that sustain their communities. However, the expansion of the oil palm industry and other extractive industries has threatened their traditional way of life and caused significant harm to the environment. The displacement of Dayak Benawan women from their traditional livelihoods and the destruction of their natural resources has led to an increase in poverty and a loss of cultural heritage. The importance of Indigenous knowledge and ecological sustainability must be recognized and prioritized in order to preserve the rights and well-being of Indigenous communities and protect the natural environment for future generations. It is essential that policies and practices are developed with the full participation of Indigenous peoples to ensure their voices are heard and their knowledge is respected and integrated into decision-making processes.

Indigenous knowledge and practices have been integral to the Dayak Benawan community's way of life and maintaining a balance with nature. The local knowledge of Indigenous peoples, especially Dayak Benawan women, plays an important role in maintaining the remaining forest biodiversity and ensuring the survival of their families. The forest is a vital source of food, timber, and non-timber products, including various medicinal plants. However, the Dayak Benawan community faces threats from the massive expansion of oil palm plantations, which could displace their

livelihood activities and reduce access to the forest. Despite their concerns, limited access to land tenure and ownership means that many Dayak Benawan women have little choice but to participate in oil palm plantations. Their voices must be heard, and their basic Indigenous rights recognized in local government regulations to ensure the protection of their knowledge and livelihoods. It is crucial to acknowledge the crucial role of Dayak Benawan women's knowledge in West Kalimantan, Indonesia, and promote sustainable development that respects their culture and traditions while maintaining ecological sustainability.

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