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NYALAM ADAT BA' ALAM: SWIDDEN CULTIVATION AND POLITICAL-ECOLOGICAL DYNAMICS AMONG THE DAYAK KRIO, WEST KALIMANTAN

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Abstract *This study examines the sustainability of swidden cultivation among the Dayak Krio community living around the Krio River in Hulu Sungai Subdistrict, Ketapang Regency, West Kalimantan Province, within a political ecology framework. The problem formulation centers on how practices that are often stigmatized by the state and companies as "ancient" or "environmentally destructive" continue to function as subsistence strategies and political negotiations for access to forest land. A qualitative ethnographic approach guided the collection of data through literature studies, participant observation, semi-structured interviews, focus group discussions, and documentation during fieldwork with Gaia Indonesia in the Forest Village Social Study project in West Kalimantan in August 2025. The findings reveal that swidden cultivation is a ritualized socio-ecological system that encodes local knowledge and spiritual relationships regarding the human-nature relationship inherited from thousands of years ago, not merely a traditional farming technique. Furthermore, the stigmatization of swidden cultivation by state law and corporate narratives serves to legitimize external control over forest land, intensifying contestation over forest access. In conclusion, Dayak Krio swidden cultivation embodies resilience, representing a negotiated strategy to maintain survival, cultural identity, and ecological sustainability amid expanding agribusiness and limiting policies.*

Keyword:
Dayak Krio, Swidden Cultivation, Political Ecology, Indigenous Knowlede, Land Tenure and Access

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1. Introduction

Living on the edge of modernization and the pressure of plantation expansion, forests remain the lifeblood of basic needs fulfillment for communities living on their borders. This vital position becomes even more apparent when we examine Indonesia's vast forest area, which spans 120,343,229.85 hectares (Badan Pusat Statistik, 2025). Furthermore, over the past eleven years, the BPS (2016) has recorded 8,643,228 households living around forest areas, and among them, there are still around 242,866 households that maintain a swidden cultivation system in

resistance to their livelihood strategy and agrarian tradition. However, from an outside perspective, swidden cultivation is often accused of causing deforestation, inefficient farming patterns, and even considered an obstacle to development. In line with this, data shows that net deforestation in 2024 reached 175,400 hectares, a figure obtained from gross deforestation of 216,200 hectares after deducting the results of reforestation, which reached 40,800 hectares (Kementerian Kehutanan, 2025).

Awareness of the vulnerability of nature, which is increasingly threatened by greedy behavior in resource management, has successfully sparked a global paradigm shift since the mid-1990s: from an initial focus on economic development to the idea of sustainable development (Jati, 2013). However, for indigenous peoples in the interior of West Kalimantan, this global discourse often clashes with the reality on the ground, where their living space continues to be threatened by the expansion of corporate plantations and state policies. This struggle has opened up space for nature to gain political recognition in political and economic studies, namely that humans and nature are essentially organisms that should coexist (Kapoor, 2001). This political recognition is evident in efforts to revitalize local wisdom as an alternative model for forest management. This is where the framework of political ecology becomes important, because it seeks to understand the relationship between humans and the environment not only as an ecological interaction, but also as the result of the tug-of-war between political, economic, and power interests (Dharmawan, 2007).

This study builds on the political ecology framework, which aims to understand environmental change as the result of interactions between ecological processes and political-economic power relations. Political ecology emphasizes that environmental issues are never purely biophysical in nature, but are always embedded in broader social struggles over access, control, and meaning. As argued by Blaikie and Brookfield (2015), problems such as soil degradation or deforestation cannot be explained solely by ecological factors; they are expressions of deeper structural inequalities, political marginalization, and economic dependence. Insights from political economy, a tradition concerned with how structural forces such as capitalism, state policy, and global markets shape the distribution of resources and power. As noted by Arsel (in White, 2009), this materialist foundation allows political ecology to reveal how state and corporate interventions in the environment perpetuate social inequality. While the political economy perspective identifies who controls and benefits from resources, as described in Ribot and Peluso's (2003) access theory, political ecology expands the analysis by tracing how these relationships are implemented and contested in specific ecological and cultural contexts. In the context of the Dayak Krio, political ecology provides an analytical bridge between structural critique and ethnographic reality—revealing how shifting cultivation is both a livelihood strategy and an expression of political resistance.

In the context of the Dayak Krio community, the struggle for access to fields is not only between them and companies, but also involves the state, which designs and establishes forest area policy schemes. The community often maintains de facto access through customary practices and local knowledge, but loses de jure control because their formal rights are not recognized—if we take it to the extreme, they are illegal. These conditions force them to continue negotiating, both through formal channels and through forms of symbolic resistance. This analytical framework finds its breath in the daily lives of the Dayak Krio community on the banks of the Krio River, West Kalimantan, who to this day remain faithful to the swidden cultivation system.

Beyond the lens of political ecology, this paper also draws on Michel Foucault's concept of governmentality to understand how the state and corporate actors exercise power through

discursive and regulatory mechanisms that define what is considered rational, productive, and legitimate. Foucault (1991; 2007) describes governmentality as "the conduct of conduct," a mode of governance that operates not merely through coercion but through the production of knowledge and norms that shape how individuals and communities govern themselves. In the context of the Dayak Krio, state regulations and corporate practices that label swidden cultivation as inefficient or environmentally destructive can be read as technologies of government that reconfigure local ecological knowledge into technical and economic terms.

Administratively, the Krio River is located in Hulu Sungai Subdistrict, Ketapang Regency, which consists of 12 villages: Batu Lapis, Beginci Darat, Benua Krio, Cinta Manis, Kenyabur, Krio Hulu, Lubuk Kakap, Menyumbung, Riam Dadap, Sekukun, Senduruhan, and Sunge Bengaras. Astronomically, this subdistrict is located at coordinates –0.9889562° South Latitude and 110.902977° East Longitude. The topography of Hulu Sungai is hilly and riverine with undulating morphology that slopes down to lowlands along the riverbanks. This area is dominated by a secondary tropical rainforest ecosystem, especially in the hills and river valleys, which serve as a living space and ecological support for the local community. The Dayak Krio community's connection to this landscape makes swidden cultivation not only an economic strategy but also a means of maintaining ecological balance.

From a political ecology perspective, swidden cultivation is not merely a means of resistance, but an embodiment of local knowledge and customs that continue to be preserved. Behind the swing of the machete and the chanting of mantras and offerings before clearing the fields, there are implied intertwined relationships with broader political structures: from state forestry regulations, market and technological expansion pressures, to global discourse on sustainable development. This paper, entitled "*Nyalam Adat ba' Alam*: Swidden Cultivation and Political-Ecological Dynamics among the Dayak Krio, West Kalimantan, Indonesia", is one of the results of Gaia Indonesia's field study in a forest village study project in West Kalimantan that took place from July to August 2025. The research focused on villages in the Hulu Sungai subdistrict, along the Krio River from the villages of Menyumbung, Senduruhan, Krio Hulu, to the uppermost village of Kenyabur. The researchers in this paper focused on the lives of the Dayak Krio people from these villages.

This paper begins with a narrative of the process and meaning contained in the practice of swidden cultivation, from the ritual of choosing a location and clearing the land to the ceremony of planting the first rice in the *jurunkng*[1]. The discussion then moves on to the stigmatization of swidden cultivation in the eyes of the state and corporate, where the Dayak Krio people face constant competition for space. This paper concludes with an analysis of the community's resistance strategies, which ultimately led them to negotiate with large-scale forces.

2. Method

This research was born from field experience with Gaia Indonesia in the Forest Village Social Study project in West Kalimantan in August 2025, using a qualitative approach based on ethnographic methods. Following Malinowski's view (in Spradley, 1997: 7), ethnography is intended to understand the perspectives of indigenous peoples, their relationship with life, and how they interpret the world around them. On that basis, this study aimed to capture how the Dayak Krio community living on the banks of the Krio River, Hulu Sungai District, Ketapang Regency, West Kalimantan, interprets the swidden cultivation system—not merely as part of

[1] *Jurukng* is a traditional rice barn in the form of a small wooden and bamboo stilt house that serves as a place to store harvested rice.

their customs and a strategy for resistance, but also as a space for the convergence of political ecology discourse with local community life (see Figure 1 for a map of the research location). In the data collection process, the author combined literature study, moderate participant observation, semi-structured interviews, focus group discussions, and documentation.

While in the field, the author placed himself in a position of moderate participatory observation: participating in various community activities, recording details of daily activities, but maintaining distance as a researcher. Semi-structured interviews were conducted to facilitate fluid conversations with informants, while still adhering to interview guidelines. Meanwhile, focus group discussions provided a space for the community to formulate shared views, respond to each other, and reveal the collective dynamics of interpreting the swidden cultivation system. Every point of conversation recorded from the interviews and focus group discussions was then transcribed into special notes that strengthened the analysis. Documentation in the form of notes, archives, and photographs not only serves as visual evidence, but also as a reminder of the atmosphere that enriches the ethnographic narrative in this study.

Figure 1. Map of the research site

3. Result and Discussion

3.1 Interpreting the Harmony of Swidden Cultivation as a Song of Life

Swidden cultivation is a traditional farming system that has been practiced by indigenous peoples since 10,000 BC (Rifqi, 2017). In Indonesia, particularly in Java and Bali, this system was almost completely replaced at the end of the 19th century by settled agriculture with terraces on slopes and a shift to annual crops such as rubber, coffee, coconut, nutmeg, and market-oriented fruits (Rasul & Thapa, 2003). However, on the island of Kalimantan itself, rural communities still practice swidden cultivation as a strategy of sustaining claims over land that has been converted into plantations, despite being under pressure from large-scale corporate land expansion (Maring, 2020).

This phenomenon is reflected in the lives of the Dayak Krio community in Hulu Sungai Subdistrict, Ketapang Regency. On the edges of the forest and the mist-shrouded Krio River, they weave their lives through swidden cultivation—a fluid ecological system that is in harmony with the rhythms of nature, while also being a source of food and a beating heart of tradition that never stops. Even long before the state claimed the region, they had established their presence through the swidden cultivation system; as stated by Nishijima (2021), the formation of the Ulu Aik Kingdom became the basis for strengthening ethnic solidarity and claiming the customary sovereignty of the Dayak community in Ketapang Regency, West Kalimantan. The community is also called *Laman Sembilan Domong Sepuloh*, which is generally interpreted as nine villages with nine local leaders and one absolute leader, although there is no clear political institution as is usually the case (ibid. 107). The customary territory of the Ulu Aik Kingdom covers a total area of 11,168.8 hectares, which includes various types of land use, including customary forests (4,711.39 ha), *bawas* (1,308.63 ha), rubber plantations (4,059.36 ha), settlements (29.88 ha), rice fields (189.89 ha), *tembawang* (713.32 ha), and coffee plantations (156.33 ha) (Badan Registrasi Wilayah Adat Provinsi Kalimantan Barat, 2025). However, these figures do not only represent the area of land, but also serve as a stage for customary practices that maintain the balance between humans and nature.

Figure 2. The implementation of *nyimak maunggu* customary practice (inspecting the land)

For the Dayak Krio community, farming always begins with a series of organized customs. The first stage is called *nyimak maunggu* or checking the land, which is the process of searching for and selecting a field location, usually in *bawas* (former fields that are three to five years old), in *tema'ngkng* or *tembawang* (former fields that have become forests), or in *rimb*a (forests that have never been cleared). Fields or ladang are usually chosen near rivers or tributaries because

the soil is considered more fertile and facilitates household activities such as cooking and fetching water, given that during the farming season the community will build *prio* or *padukuhan* in the form of simple wooden houses as temporary dwellings (see Figure 3). In this traditional process, the *mantra toto mame bapadah ka duata—tanah sama nijak, aik sama encibuk*—is chanted while a machete blade is stuck into the ground, then attention is directed to how the soil sticks to the blade; soil that sticks tightly is believed to be fertile, while soil that comes off easily is considered unsuitable for planting.

Figure 3. Exterior (right) and interior (left) views of the *prio* or *padukuhan*

After the location is chosen, the community enters the first stage of *nebas,* which is clearing the bushes. This work is done collectively, with residents taking turns going to the fields for three to five *tokap* (working days), then returning home to rest before continuing work until the entire field is completely clean. After the first *nebas* is completed, the community enters the first phase of cutting down the field trees, which requires sticky rice. The rice is attached to the sap-filled wood while reciting the *toto mame mantra: pungur banyak bangantukng ular biasa.*

Next, a *nobakng palalo* ceremony is held, which requires a jar of *tuak* (palm wine) and a chicken. This ceremony is usually held on a *tampara* (stage or wooden floor) *sambung tiga*, with a fourth tampara serving as a hall for drinking *tuak inas* or *sumpit*, complete with all the necessary equipment, before someone starts cutting down the *palalo* tree, even though it has not been completely cut down yet. Interestingly, from the author's findings in the field, it appears that some of the Dayak Krio people now use *sensaw* tools. This change has led to a shift in work patterns—from communal mutual assistance to a relationship between field owners and tool owners. However, behind the shift in work patterns triggered by the introduction of *sensaw*, the community still pays great attention to preserving the traditional rituals that accompany each stage of farming. After the *tuak inas* has been drunk, the jars and other equipment are placed on the ground, and from there the *palalo* tree is allowed to be cut down completely. This *nobakng palalo* stage is a preparation for the ritual of burning the fields or *lako.* Before beginning the ritual, the traditional leader wears a red cloth on his head. After cutting down the *palalo,* offerings are scattered while reciting the *buakng tibar totomamenya mantra*.

A few days before burning the fields, the owner makes a 2-3 meters wide path between the fields and the forest as a preventive measure to prevent the fire from spreading. Dead bamboo is prepared, dried in the sun, then broken into pieces so that it burns easily as fuel. On the day of burning, two *capatn* are provided as shadows or images of humans—one male and one female—

called *laki-bini*. These *capatn berangukng* are planted on sand, sprinkled with *pansiunkng* (a type of plant) and tengkuyukng skin (snail shells) to control or repel the *kutikng beliukng* wind, then accompanied by *minpe bujakng kajanyakng meyadikng* and *adat maumpatn burukng* or *ngumpatn roba* to scatter offerings while reciting the *mantra buakng tibar totomamenya*. This ritual aims to announce their presence to the *puaka* or *gana* (guardian spirits of nature). After the entire traditional ceremony is complete, the *pako* fire is lit to burn the fields, the main purpose of which is to turn the cut and felled plants and the layer of humus on the forest floor into ash.

Figure 4. Post-Burning Activities by the Dayak Krio Community

The period for planting rice or *nugal* has arrived. Men and women work together, digging (*nugal)* the soil with wooden sticks, then inserting rice seeds into small holes (see picture 6). The rhythm of planting is accompanied by joyful shouts, creating a collective atmosphere full of hope. No one works alone, because planting is a sign of sharing life.

Figure 5. Small holes used for *nugal* in the swidden cultivation

Following the growth of rice, the Dayak Krio community performs *nyumat lako*—a ritual of weeding to protect the plants from pests, such as rice weevils, powdery mildew, *karo hulat*, and *sangkolatn bakul.* When the rice grains begin to turn yellow, the harvest begins with the *matah hantu* ceremony: the field owner cuts the first stalk of rice as a symbol of nature's blessing. The rice from this early harvest is not eaten immediately, but is dried over a fire and stored on the roof of the house as a sign of respect for nature. Only then is the harvest allowed to begin. After *mantah hantu*, the *maharu* custom is carried out, in which the field owner invites neighbors to process the rice—one *narak* of sticky rice and one *narak* of regular rice—as a sign of togetherness. The rice that has been processed is then taken to the *jurukng* or rice barn (see image 7) in a *mukak jurukng* ceremony. At the same time, the community carries out the *melame samangat* padi custom every May 20, when some of the rice is given to the traditional leaders to be offered to *Dayang Putukng*, the spirit of the landowner. Through this ritual, the harvest is not only seen as the success of humans in cultivating the fields, but also as the result of a harmonious relationship with the forces of nature. It is this awareness that makes the Dayak Krio farming system more than simply food production; it is a form of ecological ethics.

Figure 6. *Jurukng* or rice granary

The swidden cultivation system of the Dayak Krio community presents a political ecological perspective that can be interpreted as a song of life—an expression of the harmonious relationship between the community and its environment. This relationship is not static, but is continuously reproduced through customs, symbols, and collective work. Ecological sustainability in this context does not arise from modern technology, but from a system of meaning that binds the community to its land (Escobar, 2008; Toledo & Barrera-Bassols, 2008). However, this ecological harmony is never free from threat. One example is the presence of *sensaw* tools in swidden cultivation systems, which slowly shift local logic towards a logic of capital oriented towards productivity and accumulation. A similar phenomenon is also found in

Latin America, where indigenous agricultural systems have been sidelined by modernization and market orientation (Zimmerer & Bassett, 2012).

This situation confirms Robbins' (2012) view that political ecology must examine the power relations that shape both the ecological and social landscapes. Thus, the swidden cultivation system of the Dayak Krio people cannot be understood solely from a technical perspective, but must be viewed as a political-ecological arena. The life song of the swidden cultivation system marks a harmonious and meaningful relationship, but vulnerabilities begin to emerge when it faces external intervention. It is at this point that the value-laden local system begins to encounter the logic of capital and power—a tension that will be explored in the next section.

3.2 Stigmatizing Swidden Cultivation through State and Corporate Perspectives

Shifting cultivation is essentially a survival strategy that has accompanied human history from prehistoric times to the modern era. The transition from hunting and gathering to farming marked one of the most significant milestones in human history. Around 4,000 years ago, during the Neolithic period, a cultural revolution took place, characterized by the emergence of new technologies—such as quadrangular adzes and pottery—introduced by Austronesian communities migrating from Taiwan through the Philippines to the Indonesian archipelago (Bellwood, 2000; Simanjuntak, 2008). Archaeological findings of quadrangular adzes in the Ketapang area, associated with pottery fragments and rice remains, provide strong evidence of a transitional phase toward an agrarian system during the Neolithic era (Sugiyanto, 2018). Ultimately, shifting cultivation became a way for humans to adapt to their environment. However, the practice of burning fields—an integral part of this system—has often been stigmatized as the main cause of forest and land fires (Karhutla) in Indonesia. In reality, field evidence indicates that most fire hotspots are found in areas where large-scale plantations, such as oil palm estates, are being established, whereas traditional swidden fields typically cover only one to two hectares and rarely trigger major wildfires.

At this point, it is important to look at the swidden cultivation system from the perspective of the community itself. For the Dayak Krio community, farming is not simply a way of cultivating crops, but a form of local wisdom that regulates the relationship between humans and nature. However, when this system is made a scapegoat by state and private elites, in this case several forestry companies, and followed by the criminalization of farmers, the pressure on the freedom of indigenous peoples becomes even greater. If this situation continues, it is not impossible that the cultural heritage of swidden cultivation, which has sustained life for thousands of years, will be threatened with extinction in the future.

The colonial legacy is also one of the roots of stigmatization against the swidden cultivation system in Indonesia. During the Dutch colonial period, the *Agrarische Wet* (Agrarian Law or *Undang-Undang Agraria*) of 1870 was enacted, which was the second phase of land ownership and access regulations. This phase is known as the era of plantation liberalization in Indonesia. Although it was initially welcomed because it abolished the *cultuurstelsel* (forced cultivation system) and recognized citizens' rights to their land, it also had an implicit colonial agenda, which was to open up opportunities for foreign entrepreneurs to have access to land outside of state land, including land cultivated by residents under a lease system, while also utilizing local labor (Shohibuddin, 2010 in Masyrullahushomad & Sudrajat, 2019).

This policy ultimately narrows the living space of indigenous peoples, including the Dayak Krio, who still maintain a swidden cultivation system. The land that was once vast for field rotation is now shrinking, forcing the *tembawang* cycle to be shorter. A study by van Noordwijk

et al. (2008) explains that swidden cultivation is not the same as deforestation. In fact, according to the international definition, the fallow period for swidden cultivation can last five to ten years, allowing for the recovery of secondary forest canopy with 30% vegetation cover and a height of about five meters (ibid. 14). Shortening this rotation not only reduces soil fertility, but also disrupts the cosmological order of the Dayak Krio community, who view secondary forests as an important part of the life cycle that must be restored before being reopened.

Stigmatization of swidden cultivation continued into the *Orde Baru* era, when this system was positioned in the state narrative as an agricultural practice that was considered backward, inefficient, and potentially destructive to forests. Through Law No. 5 of 1967 on Forestry, the state asserted full control over forest areas and further restricted the space for indigenous peoples to clear fields using traditional methods. This narrative was further reinforced by the intensive transmigration program, in which local swidden cultivators were often compared to intensive rice farmers from Java, who were held up as models of modern agriculture (Li, 2007).

Entering the Reformation era, which in reality didn't eliminate this stigma through *Undang-Undang* No. 41 of 1999 concerning Forestry, which also became an important book for forestry policy in Indonesia, as seen in *Pasal* 4 *Ayat* 1, which states that all forest areas are under state control, thereby strengthening state control over access to and management of forests. Nevertheless, a compromise was reached through Minister of Environment and Forestry Regulation (PERMEN LHK) No. 10 of 2010, which allows indigenous peoples to continue practicing slash-and-burn agriculture on a maximum area of two hectares per family head. This policy represents a form of negotiation by the state, but at the same time affirms the ambivalent position of traditional farmers within the national legal system.

For the Dayak Krio community, the use of burning to clear fields is not simply a quick way to clear land, but a means of increasing soil fertility. The ashes from burning wood and shrubs are believed to restore soil fertility, functioning as natural fertilizer, and allowing them to farm without dependence on chemical fertilizers[2]. Thus, this practice is a manifestation of local ecological knowledge that combines food production, soil conservation, and cost efficiency. However, this ambivalence continues to haunt their minds. The state often labels this practice as illegal because it causes forest fires. On the other hand, the Dayak Krio community considers it an ecological and economic adaptation mechanism that enables survival amid climate uncertainty and market fluctuations. This contradiction reveals a clash of perspectives: a system that is considered a problem for the state's dreams is interpreted as a strength in the internal logic of the community.

In the perspective of political ecology, this discourse is not neutral, but rather functions as a hegemonic strategy that legitimizes the expansion of large plantations and industrial forest concessions. Peluso (1992) shows that the discourse of "forests damaged by fields" is used as a justification for the state to control land and resources. Meanwhile, Dove (2012), in a classic study of the *Kantu'*[3] in West Kalimantan, also emphasizes that the swidden cultivation system actually has strict ecological rules and plays a role in maintaining sustainability, but the state's official narrative ignores this in favor of political-economic interests.

From a corporate perspective, indigenous peoples' lands are not viewed as living spaces but rather as productive assets awaiting capitalization. From a Foucauldian governmental perspective, the stigmatization of swidden cultivation reflects how power operates not only

[2] Results from observations, interviews, and discussions conducted during the Forest Village Social Study with Gaia Indonesia.

[3] Kantu' in Dove's (1985) writing refers to the Dayak Iban community living in the Kapuas Hulu region, which was the subject of his research.

through coercion but also through the production of knowledge and rationalities that shape how people think and act. This has been the case since the colonial era, where state policies and corporate practices collaborate to construct swidden farmers as "problematic subjects" who must be reformed, disciplined, or removed by stigmatizing them as land destroyers, fire-causing agents, and practitioners of traditional systems deemed inefficient in producing crops. Furthermore, companies view idle land as land that can be converted into surplus commodities at any time. The state reinforces this logic through various regulations, one of which is Government Regulation (*Peraturan Pemerintah*/PP) No. 20 of 2021 concerning the control of abandoned areas and land, which stipulates that land or areas considered abandoned—in the sense of not being cultivated, used, utilized, or maintained—can be controlled and reused by the state after a certain period of time. This market logic is in line with the state's logic of economic growth, which encourages privatization and the granting of concessions. Foucault (2007) conceptualized governmentality as the "conduct of conduct," referring to the techniques, calculations, and discourses that states use to govern populations by defining what is rational, productive, and legitimate (pp. 108–110). As Foucault (1991) illustrates in *The Foucault Effect*, governmental power functions by transforming social life into a realm of technical management, where interventions appear rational and benevolent while simultaneously securing state and corporate control. Thus, the discourse that criminalizes swidden cultivation operates as a form of governmentality—a mechanism through which state and capital jointly govern by shaping subjectivities, legitimizing dispossession, and normalizing market-based rationality.

Moreover, for companies, farmers who practice swidden cultivation are often labeled as forest encroachers. This stigma has implications for the relationship between indigenous peoples and companies that often collude with the state. When farmers are labeled as encroachers, they are automatically considered to be breaking the law. Eilenberg (2021), in his study entitled *The Last Enclosure: Smoke, Fire and Crisis on the Indonesian Forest Frontier* notes that the policy of prohibiting slash-and-burn farming by swidden farmers is used as a basis to restrict farmers' movements, including through administrative and legal actions that ensnare them. This finding is reinforced by research by Daeli et al. (2021), which shows that Dayak farmers experienced intimidation and increased surveillance after the ban on field burning was enforced, even though the practice had been part of their traditional agricultural system for centuries.

Several reports also recorded cases where residents were arrested or intimidated for clearing land in areas that were later designated as production or conservation forest areas. According to data compiled by the Indigenous Peoples Alliance of the Archipelago or Aliansi Masyarakat Adat Nusantara (AMAN) and six other agrarian organizations, in the last ten years there have been 687 agrarian conflicts in indigenous peoples' territories, covering an area of approximately 11.07 million hectares[4]. This figure shows the high vulnerability of indigenous peoples to criminalization and eviction, while also revealing the structural tension between the rights of indigenous peoples and state policy. The situation is exacerbated by the state's masterful support for land and natural resource management policies that are often discriminatory in nature. IWGIA or International Work Group for Indigenous Affairs[5] (2025) notes that procedures for recognizing indigenous territories are often overlapping and complicated, accelerating the

[4] Madani Berkelanjutan. (2024, December 19). *Passing of the Indigenous Peoples Bill in 2025: Awaiting Concrete Action from Parliament and the Government for Indigenous Communities.* Retrieved from https://madaniberkelanjutan.id/passing-of-the-indigenous-peoples-bill-in-2025-awaiting-concrete-action-from-parliament-and-the-government-for-indigenous-communities/

[5] IWGIA is a global human rights organization that works to promote, defend, and protect the rights of Indigenous Peoples worldwide.

loss of indigenous peoples' control over their own land. Instead of understanding the ecological logic of indigenous peoples, the state has created policies that discredit their practices.

The swidden cultivation system is often perceived as an obstacle to maximum productivity because it is considered to leave the land idle during the fallow period. In fact, traditionally managed swidden cultivation allows the land to rest for a certain period of time to allow the forest to regrow (Food and Agriculture Organization, 1999). Ironically, the *Orde Baru* construction of swidden cultivation framed this system as a threat, so that it could be understood as part of the political forest (Peluso & Vandergeest, 2001), namely the state's attempt to frame the living space of indigenous peoples as state forests to facilitate capitalist control and exploitation.

3.3 Contested Spaces: Struggles over Power and Forest Access

The indigenous people see the swidden in the forest as a living space that connects humans with the cosmos. In contrast, the state sees them as an administrative space that is constantly mapped, regulated, and controlled through legal instruments. This battle of meanings has turned fields into an arena for the struggle for power and access. If we trace it historically, the swidden cultivation system in Indonesia existed long before the state claimed sovereignty over the land. This is in line with Lasswell's view (in Myers et al., 2018) that land rights and decisions on land use are essentially political—they concern who gets what. For the Dayak Krio community, swidden cultivation is not an ahistorical phenomenon, but part of the long heritage of the archipelago's agrarian civilization, which has its roots in the Neolithic period, long before colonialism introduced the legal regime that forms the basis for forest management in Indonesia today.

Within the framework of the theory of access (Ribot & Peluso, 2003), the Dayak Krio community establishes its relationship with the forest not through green certificates, but through customary mechanisms, ecological knowledge, and cultural legitimacy that have been passed down from their ancestors. This relationship is embedded in the practice of managing *tembawang* and *bawas*, which are markers of hereditary rights to land. Evidence of these claims is reinforced by ancestral artifacts, such as jars, plates, or other items whose authenticity is collectively witnessed and recognized. In contrast, the state presents a legal logic that treats forests as administrative objects and economic commodities. Legal instruments such as laws, concession permits, and forest area classifications are used as weapons. Furthermore, the state constructs a discourse that stigmatizes the practice of burning in swidden cultivation as something forbidden—a strategy that judges indigenous peoples for their way of life.

This approach actually has its roots deep in the colonial era, when the Dutch, through the *Agrarische Wet* of 1870, stipulated that land deemed uncontrolled automatically became state property (*domein van den staat*), a legal logic later reproduced in the *Undang-undang* of 1967 about Forestry Law and *Undang-Undang* No. 41 of 1999. Through these regulations, forests in indigenous peoples' settlement areas were positioned as state forests and largely allocated as concessions to private logging companies. The state utilized legal-formal access and hegemonic discourses, including the stigmatization of swidden cultivation as forest destroyer to legitimize its control (Peluso, 1992; Peluso & Vandergeest, 2001). Conversely, the Krio Dayak communities maintained access through negotiation strategies, traditional rituals, and everyday resistance, for example by continuing to open fields in areas formally claimed by the state (Maring, 2020). Thus, access to the forests in the Krio River region—where the Krio Dayak community resides—became an arena for power contestation. On the one hand, the state views it as an economic

commodity that must be controlled; on the other hand, the Krio Dayak community views it as a socio-ecological space as well as a cultural heritage.

3.4 Strategies of Resistance and Negotiation among Local Communities

Swidden cultivation for the Dayak Krio community is not simply a means of subsistence; this system also serves as a strategy for resistance and negotiation with the state and companies in order to retain power and access to their fields. Many smallholder farmer families depend on swidden cultivation in rural West Kalimantan, and they are facing dynamic socioeconomic pressures. The extensive nature of swidden cultivation, in which the aim of increasing production is achieved by expanding and clearing new land areas, is being limited by the expansion of company land and policies that restrict traditional modes of cultivation (Dove 2015; Geertz 2016; McCullough 2019; Siahaya et al. 2016 in Maring, 2020).

The adaptation of the Dayak Krio community is also evident in the utilization of former fields, such as *tembawang* or *bawas*. Fields that have been cultivated are usually abandoned temporarily, but are still marked if they are to be replanted at a later date. The findings show that these fields are often planted with crops such as fruits, rattan, resin, and rubber. This is in line with van Noordwijk et al. (2008), who noted that during the fallow period, farmers use the fields to plant long-lived productive trees.

In the period from 1920 to 1930, rubber became the main export commodity and was considered 'black gold' for rural communities (Dove, 1993). Various studies show that the farming strategy on the island of Kalimantan, particularly the practice of planting rubber on former fields, became a way for families to meet their household needs. This system allowed them to obtain rice from the fields and cash income from tapping rubber, thus creating a relatively stable combination of subsistence and commodities.

Figure 7. Transformation of rubber plantation into oil palm

The Dayak Krio community's adaptation and negotiation strategies have been ongoing since the colonial era until after the Reformation. During the colonial period, swidden cultivation was integrated with rubber as an economically valuable commodity. This continued during the *Orde Baru* era, when the Soeharto administration, known as the Father of Development, carried out massive expansion through a policy of distributing forest concessions to companies. The Krio River is became one of the operational areas for companies holding Forest Concession Rights (*Hak Penggunaan Hutan/*HPH), resulting in the fragmentation of the Dayak Krio community's forests. Pressure intensified in the 1990s with the introduction of the Industrial Forest Park (*Hutan Tanaman Industri*/HTI) scheme, which planted secondary forests and former fields with acacia trees. Entering the post-Reformation era, the administration of President Susilo Bambang Yudhoyono placed forestry issues within the framework of global climate change through a scheme called REDD+ and implemented a zero burning policy[6]. At this point, the community and the state renegotiated, resulting in the issuance of Minister of Environment and Forestry Regulation (PERMEN LHK) No. 10 of 2010, which granted limited permission to clear up to two hectares of land per family using fire. Four years later, during the era of President Joko Widodo, the government rolled out an agrarian reform program through the TORA scheme in forest and non-forest areas[7], which promised opportunities for the legalization of forest access for indigenous peoples. However, the reality on the ground shows that the implementation of this program is progressing much more slowly than the pace of expansion of oil palm and industrial timber plantations

In the context of this slow-down, a new dynamic of adaptation has emerged: from 2020 to 2025, some of the Dayak Krio community began to convert their fields to oil palm plantations. This transition did not happen spontaneously, but was influenced by structural factors such as access to capital and cooperation contracts with companies. However, the pattern of oil palm monoculture presents new challenges related to tenure, landscape, and profit sharing. Unlike rubber, which can be planted in an agroforestry system, oil palm forces land homogenization, while economic pressures, concession expansion, and permanent agricultural policies further narrow their choices. Under these conditions, the Dayak Krio community responds to pressure by adapting ecologically: reducing the size of their fields, diversifying their economy through labor migration or small-scale trade, and negotiating space through traditional rituals, village deliberations, and alliances with non-governmental organizations (NGOs) and indigenous peoples' movements. These strategies confirm that the Dayak Krio community is not a passive victim, but rather an actor that continues to actively negotiate using local wisdom as their own political asset to resist their living space.

4. Conclusion

The swidden cultivation practices of the Dayak Krio community in Hulu Sungai are not simply a traditional cultivation technique, but rather a socio-ecological system that integrates local knowledge, traditional rituals, and adaptive strategies to external pressures, in this case from the state and corporations. Behind each stage of farming—from choosing a location to harvesting—there are symbols, ecological ethics, and spiritual relationships that bind humans to their natural environment. This system has proven itself over time to provide food sources,

[6] Reducing Emissions from Deforestation and Forest Degradation, which began in December 2013 as a result of COP (Conference of the Parties) 19 in Warsaw, Poland.

[7] TORA is Land for Agrarian Reform, which applies to forest areas under the social forestry scheme and non-forest areas under the Cultivation Rights (HGU) scheme.

create cultural identity, and serve as a means of maintaining environmental sustainability in a cycle that has lasted for thousands of years.

However, the sustainability of swidden cultivation has never been free from political and economic interventions that limit people's living space. From colonialism to the contemporary era, swidden cultivation has often been stigmatized as a practice that destroys forests, is ancient, encroaches on forests, and even causes forest fires. Within the framework of political ecology, this stigma functions as a hegemonic discourse that legitimizes the takeover of customary spaces. Nevertheless, the Dayak Krio are not passive: they have developed adaptive strategies by planting rubber on former fields, diversifying their economy, and negotiating through customary mechanisms, deliberation, and alliances with NGOs. The historical trajectory of the Dayak Krio shows that tradition can function as a political strategy. By demonstrating resistance to swidden cultivation, they not only preserve local identity and knowledge, but also fight for their right to living space amid the pressures of globalization. On the one hand, the swidden cultivation system affirms the ecological harmony inherited from their ancestors; on the other hand, it also becomes an arena for power contests between the state, the market, and local communities.

Further research on Dayak Krio swidden cultivation aims to explore the typology of evolving practices (field rotation) and the dynamics of intergenerational perceptions of the sustainability of this system amid climate change and market pressures (economic needs). In addition, it is important to examine the multi-actor interactions—the state, companies, NGOs, and indigenous communities—within a political ecology framework, in order to assess the extent to which local negotiation strategies are able to demonstrate resistance and transform amid national policies and global discourse on sustainable development. The political ecology framework has helped us to read the "duality" of the meaning of swidden cultivation. From an outside perspective, swidden cultivation is labeled as an environmental problem that destroys forests. However, for the Dayak Krio community itself, this practice is understood as an ecological solution as well as a marker of cultural identity. Swidden cultivation is not simply an agricultural technique, but a political-ecological practice that stakes the sustainability, identity, and distribution of power in their living space. In reality, swidden cultivation also functions as a local political instrument, regulating relations, negotiating claims, and expanding the living space of the Dayak Krio community through a shared symbolic language.

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