

THE SOCIAL VULNERABILITY OF INDEPENDENT PALM OIL FARMERS RESULTING FROM GLOBAL MARKET PRESSURES IN KETAPANG DISTRICT, WEST KALIMANTAN

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Abstract

This study aims to analyze the social vulnerability of independent palm oil farmers in Ketapang District, West Kalimantan, as a result of the increasingly stringent pressures of global market policies. The focus of this research is directed towards how international policies, such as the European Union Deforestation Regulation (EUDR) and sustainability certification standards (ISPO, RSPO), impact farmers' access to global markets and their socio-economic well-being. The approach used is qualitative with a case study design, utilizing in-depth interviews, field observations, and policy analysis. The findings indicate that global regulatory pressures create new vulnerabilities for independent palm oil farmers, characterized by low capacity to meet sustainability standards, limited access to financing, and weak institutional support. Global policies, which have not been matched with local capacity building, result in decreased competitiveness and the risk of market exclusion for independent farmers. These findings highlight the importance of inclusive sustainable transition strategies through land legalization, the establishment of traceability hubs, and support for financing and certification assistance for independent palm oil farmers.

Keywords: Social Vulnerability, Palm Oil Farmers, Global Market Pressures, Spatial Security, Human Security

Introduction

The social vulnerability of independent palm oil farmers in Indonesia arises from the inability of this group to adapt to changes caused by the dynamic and frequently changing global market policies (Kamim & Abrar, 2020). In recent years, the term "social vulnerability" has gained increasing attention in academic discourse and policy, with numerous studies explaining how market uncertainty and policy shifts can exacerbate the economic and social vulnerabilities of communities, particularly independent palm oil farmers (Pacheco et al., 2020; Putri et al., 2022). Social vulnerability theory provides insights into how external factors such as global policies and market instability can undermine the social resilience of farmers who rely on the agricultural sector as their primary source of income (Cutter, 1996; UNDP, 1994). Given that the social

vulnerability of independent palm oil farmers is heavily influenced by unpredictable global market policies, this presents a significant challenge to the sustainability of their livelihoods (Ojemade et al., 2019; Dradjat, 2016).

Social vulnerability arises when economic and social systems are unable to absorb or address changes caused by external pressures, such as price fluctuations and international regulations (Ribot & Peluso, 2003; Pacheco et al., 2020). In the context of independent palm oil farmers, this vulnerability is reflected in their dependence on highly volatile global market prices and limited access to the information and resources needed to meet international policy requirements (Malau & Rambe, 2022; Kamim & Abrar, 2020). As a result, these farmers face difficulties in adapting to market changes, which often threaten their social and economic well-being (Saragih, 2022). To address this issue, it is crucial to understand how social, economic, and institutional factors interact in shaping the vulnerability levels faced by independent palm oil farmers, so that appropriate policies can be implemented to mitigate its negative impacts (Novira, 2023; Pacheco et al., 2020).

This study focuses on the social vulnerability faced by independent palm oil farmers in West Kalimantan as a result of global market policies. Previous research has shown that although global market policies can provide opportunities for palm oil-producing countries like Indonesia, these policies are often disadvantageous for independent palm oil farmers who lack the capacity to meet international standards (Previo & Azzizah, 2023; Pratama & Widodo, 2020). In other words, global market policies implemented without considering the farmers' ability to adapt to these changes can exacerbate their social and economic inequalities (Suwarno, 2019; Saragih, 2022). Building on this understanding, the present study aims to explore in greater depth how the theory of social vulnerability can be applied to understand the challenges faced by independent palm oil farmers in coping with the pressures of increasingly stringent global market policies.

Most research on the social vulnerability of independent palm oil farmers in Indonesia has investigated the impact of global market policies from a singular dimension. However, considering previous studies in this field and the fact that social vulnerability is influenced by various factors, this study provides a novel contribution by highlighting the interconnection between global market policies and the socio-economic factors affecting independent palm oil farmers. Research by Latipah et al. (2018) and Previo & Azzizah (2023) suggests that holding international certifications such as ISPO and RSPO can reduce the social vulnerability of palm oil farmers by providing them with access to broader international markets. Conversely, Muli (2016) argues that global market policies exacerbate the social vulnerability of independent palm oil farmers, particularly concerning high certification costs and unclear regulations. This study aims to fill the gap in the existing literature by examining in greater detail how global market policies affect the social vulnerability of independent palm oil farmers in West Kalimantan, as well as identifying the socio-economic factors that contribute to either exacerbating or alleviating this vulnerability.

This study was conducted in Ketapang District, West Kalimantan. The selection of this location is based on the fact that West Kalimantan is the third-largest palm oil-producing province in Indonesia, with a total production reaching 5.29 million tons in 2023, making it the third-largest national producer, contributing 11.3% of the total national palm oil production (BPS West Kalimantan, 2023). Ketapang was chosen because the majority of palm oil farmers in this area are independent farmers who rely on global markets to sell their products but face difficulties in meeting the increasingly stringent requirements of global market policies. Ketapang serves as a relevant location for this research as independent farmers in the region face significant

challenges related to global market policies, such as the EUDR regulation, which limits their access to international markets and directly impacts their income (Saragih & Rahayu, 2022; Kamim & Abrar, 2020). This study aims to explore in greater depth how global market policies, which require farmers to meet international standards, can exacerbate or reduce the social vulnerability of independent palm oil farmers in the area.

This paper presents the results of an exploration into the impact of global market policies on the social vulnerability of independent palm oil farmers in Ketapang District, West Kalimantan, followed by an investigation to examine the relationship between global market policies and the social vulnerability of farmers, as well as to identify the social and economic dimensions that influence their resilience. Overall, this study seeks to determine the level of correlation between global market policies, such as the EUDR regulation and international certification, and their impact on the well-being of independent palm oil farmers, while also identifying the factors contributing to social vulnerability among independent farmers, in order to facilitate the adoption of more inclusive policies that support their sustainability. This study contributes to complementing the various uses of global market policies in agricultural development planning practices in Ketapang District, West Kalimantan, Indonesia.

Method

This research employs a qualitative-descriptive approach (Creswell, J. W., & Poth, C. N., 2016) with a focus on exploring the impact of global market policies on the social vulnerability of independent palm oil farmers. The study also explores the environmental, social, economic, and political dynamics faced by independent palm oil farmers, as well as how global market policies and additional certifications influence their livelihoods. The researcher adopts the Social Vulnerability approach (Cutter, 1996), which encompasses various dimensions, including economic, social, and environmental vulnerability. This study focuses on the impact of global market policies on the social vulnerability of independent palm oil farmers by examining their vulnerability to price fluctuations, changes in market policies, and access to international markets.

This study also integrates the concept of Human Security (UNDP, 1994) to illustrate how global market policies affect the human security aspects of palm oil farmers. The research encompasses the three main dimensions of Security: Economic Security (Chimits et al., 2024), which focuses on the farmers' dependence on global market prices and the risks associated with income instability; Environmental Security (Barnett, 2007), which is related to the impacts of environmental changes and land degradation in the palm oil industry, as well as its effects on farmers' resilience to climate change threats; and Social Security, which concerns the social well-being of farmers in the face of economic uncertainty and global market policy changes.

The locus of this study is Ketapang District, West Kalimantan, which is the third-largest palm oil production center in Indonesia. Ketapang District plays a strategic role in the palm oil industry but also faces significant socio-economic challenges. This location was selected due to its relevance to the research topic and as a real-world example of the impact of global market policies on the lives of independent palm oil farmers.

In this study, data collection techniques include interviews, field observations, literature review, and documentation. Interviews were conducted to gather information from the Agriculture, Livestock, and Plantation Office of Ketapang District, as well as from independent farmers, in order to explore issues that need to be investigated and obtain more in-depth information. Field observations were carried out to gain a

comprehensive understanding of the on-the-ground conditions and to verify the data obtained from the interviews. Data processing in this qualitative study was carried out systematically, combining the data collection techniques mentioned above. Data analysis began as the researcher entered the study location and continued throughout the research process. The stages of analysis include the collection of information through interviews and observations, data reduction, which involves filtering and organizing the data to make it more structured, and data presentation, which is arranged in narrative forms, matrices, or tables to facilitate the understanding of relationships between pieces of information. Conclusions are drawn by comparing and grouping the available data, and the conclusions are provisional, subject to refinement as new findings emerge. This process follows the interactive analysis stages described by Miles et al. (2018), which include collection, identification, reduction, and conclusion drawing from the data obtained.

Result and Discussion

Nationally, independent palm oil farmers occupy a highly strategic position in the supply chain of Indonesia's palm oil industry, both in terms of production contribution and rural economic equity. However, this strategic position does not correlate with their level of welfare. Data presented by CIFOR–ICRAF (2021) shows that approximately 40 percent of the total area of palm oil plantations in Indonesia is owned by independent palm oil farmers, the majority of whom are independent smallholders. They contribute more than a third of the national palm oil production, but the majority still operate independently outside the core company partnership model (plasma). This indicates that the significant economic potential is dispersed among the most vulnerable groups. As explained by Ekaputri et al. (2025), only about 7 percent of the fresh fruit bunch (FFB) supply entering certified mills comes from independent farmers, while the rest comes from plasma estates or large companies. This figure highlights a structural gap between production contribution and the involvement of independent farmers in the high-value certified supply chain, which also confirms the participatory inequality in the governance of sustainable palm oil in Indonesia.

This gap is clearly reflected in Ketapang District, West Kalimantan, one of the main centers of national palm oil production, with an output reaching 5.29 million tons in 2023 (BPS Kalbar, 2023). Based on field research results and secondary data, the majority of palm oil farmers in Ketapang are independent farmers with an average land ownership of two to five hectares per household. The cultivation system they apply is still simple, based on ancestral experience, and rarely receives technical assistance from government or private institutions. This condition leads to relatively low land productivity, while production costs and market risks continue to rise. More than half of the farmers lack formal land legality, as most plantations are located on customary land or uncertified plots. The absence of legal documentation restricts their access to formal financial institutions, forcing farmers to seek financing through middlemen with high interest rates. This informal financing mechanism traps farmers in an economic vulnerability cycle that is difficult to break, especially when FFB prices at the farmer level drop due to global price fluctuations.

Structural inequality is also evident in the institutional dimension and organizational capacity. Interviews with farmer group leaders revealed that only a small portion of farmers are members of active cooperatives, while the rest sell their harvests individually to middlemen. This situation weakens their bargaining position in price negotiations and limits access to technical training and certification opportunities. De Vos et al. (2023) found that 77 percent of farmers who successfully obtained RSPO certification came from

groups that were previously involved in plasma schemes or core company programs, which were institutionally better prepared and had functional Internal Control Systems (ICS). In contrast, independent farmers in Ketapang face significant obstacles due to weak institutional frameworks, a lack of trained human resources, and the absence of an administrative system to support the certification audit process. This situation illustrates that sustainable certification policies, without institutional support, risk deepening the divide between large-scale farmers and independent palm oil farmers.

From a productivity perspective, many independent farmers' plantations in Ketapang have surpassed the age of 18–20 years, meaning they have passed the optimal productive phase. However, limited capital and high replanting costs have caused most farmers to maintain their aging plantations with decreasing yields. This decline in productivity is not only due to the age of the plants but also the reduced intensity of fertilization and plantation maintenance when FFB prices drop. According to a Reuters report (2025), more than one-third of independent palm oil plantations in Indonesia and Malaysia have exceeded their peak productive age, and without replanting, productivity could decline by up to 30 percent. In Ketapang, a similar situation is exacerbated by limited access to subsidized fertilizers, a lack of technical knowledge transfer, and a high dependence on the unstable local market. This decline in productivity directly impacts income levels and the ability of farmers to maintain sustainable cultivation practices.

In addition to technical and financial constraints, market access represents another significant source of vulnerability. Independent farmers in Ketapang generally sell their harvests through long supply chains involving middlemen, traders, and mills, which results in diminishing profit margins. In this system, FFB prices at the farmer level often do not reflect quality or global market value but are determined by intermediary actors with greater market power. Ekaputri et al. (2025) note that only 36 percent of RSPO-certified mills in Indonesia purchase directly from independent farmers; the remainder opt for supplies from plasma estates or certified suppliers due to simpler administrative processes and lower audit risks. As a result, independent farmers are trapped in a low-value supply chain, which closes opportunities for them to obtain premium prices. In the context of the implementation of the European Union Deforestation Regulation (EUDR), the exclusion of independent farmers from formal supply chain systems becomes a real threat, as the regulation requires full traceability to the origin of the plantation. Without digital data support and strong local institutions, independent farmers in Ketapang are at risk of losing access to high-value export markets, further weakening their economic position.

From an information governance perspective, Ketapang District also faces limitations in data infrastructure and system integration. The absence of a traceability hub connecting data from farmers, land, and mills results in inefficiencies in certification, auditing, and sustainability reporting processes. The European Forest Institute (2024) emphasizes that the main challenge of certifying independent palm oil farmers in Indonesia lies not only in the technical aspects of production but also in information governance and local-level support. Without an adequate digital data system, certification costs will remain high, reducing the chances for independent palm oil farmers to meet global standards. In some regions of Sumatra, programs like the Smallholder Hub developed by the World Resources Institute (WRI) Indonesia have proven effective in enhancing farmers' capacity in land legalization, technical training, and access to certification. However, such initiatives have yet to reach many areas in West Kalimantan, including Ketapang, which is one of the largest palm oil production centers in Indonesia. Therefore, the establishment of a traceability and certification hub at

the district level is an urgent need to integrate farmers' data, reduce certification costs, and accelerate compliance with the EUDR regulations.

The existing conditions of independent palm oil farmers in Ketapang illustrate an interconnected cycle of vulnerability across economic, social, and institutional dimensions. The inability to access formal financing results in low production capacity; low productivity diminishes income; low income restricts the ability to undertake replanting or certification; while the lack of certification closes access to global markets, ultimately reducing selling prices. In the terminology of Human Security (UNDP, 1994), this situation reflects a dual threat to both economic security and environmental security. Economically, price fluctuations and dependence on middlemen create income instability, while environmentally, land degradation and aging plantations reduce agricultural ecosystem resilience. These two aspects reinforce each other, creating a chronic social vulnerability cycle.

Therefore, the strategy for sustainable palm oil development in Ketapang must not only focus on meeting global market regulations but also prioritize strengthening the social and institutional capacity of independent farmers. The local government, together with industry partners, needs to create a comprehensive support scheme that includes land legalization, training in sustainable farming practices, replanting funding with grace periods, and the establishment of a digital-based integrated data system to support product traceability. Only with such an inclusive and socially just approach can independent palm oil farmers in Ketapang break out of the vulnerability cycle and become an integral part of the sustainable global supply chain.

Empirical findings regarding the conditions of independent palm oil farmers in Ketapang District reveal that the social vulnerability they experience stems not only from microeconomic factors such as price fluctuations and limited capital but also from the manifestation of an imbalanced global socio-economic structure. In this context, the Social Vulnerability Theory proposed by Cutter (1996) serves as a foundational framework for understanding how the combination of external pressures and internal capacities creates vulnerable situations for communities. Cutter explains that social vulnerability arises when communities lack the adaptive capacity to cope with shocks originating from outside their social system, such as policy changes, economic fluctuations, or ecological disasters.

Based on this theory, the position of independent palm oil farmers in Ketapang can be understood as a group facing "double exposure": first, they are exposed to global market fluctuations that directly affect FFB prices and income; second, they have low adaptive capacity due to weak social capital, education, and institutional support. This situation aligns with the findings of Ojemade et al. (2019) and Pacheco et al. (2020), who emphasize that independent palm oil farmers in the global commodity sector are often the most vulnerable to trade policy changes and international environmental regulations. In Ketapang, farmers' dependence on middlemen, lack of access to formal financial institutions, and minimal land legality are concrete manifestations of the low adaptive capacity described by Cutter.

Additionally, the concept of Access (Access Theory) proposed by Ribot and Peluso (2003) helps explain why independent farmers struggle to derive proportional economic benefits from the resources they own. According to Ribot & Peluso, "access" does not only refer to legal ownership of resources but also encompasses the ability to utilize, control, and profit from these resources through social, political, economic, and institutional networks. Your research findings indicate that although farmers in Ketapang own their own

palm oil plantations, they do not have full access to the economic value of their produce. This is due to their dependence on middlemen, the absence of direct market infrastructure, and the weak organizational capacity to negotiate with mills. In other words, they have physical access to land, but lack economic and institutional access to the added value of production.

This access limitation is further exacerbated by global policy dynamics such as the European Union Deforestation Regulation (EUDR), which, in principle, aims to reduce global deforestation but in practice can lead to social exclusion for groups of farmers who do not have the capacity to meet administrative and geo-tag tracing requirements. The Access Theory explains that when market instruments and international policies narrow the pathways to global markets without improving local capacity, such policies can create "differential access," where large actors (companies, strong cooperatives, and exporters) benefit from the regulations, while smaller actors, such as independent farmers, lose economic participation opportunities. This phenomenon is reflected in your field findings, where only a small number of farmer cooperatives in Ketapang have the potential to join the RSPO/ISPO certified supply chain, while the majority still rely on low-priced domestic markets.

From the perspective of the Human Security concept popularized by UNDP (1994), the conditions of independent farmers in Ketapang illustrate vulnerability in two main dimensions: economic security and environmental security. In the dimension of economic security, dependence on global prices and weak bargaining positions cause farmers' income to be highly volatile and unstable. When global CPO prices drop, farmers lack protective mechanisms such as savings, agricultural insurance, or long-term contracts to safeguard their income. This condition aligns with the concept of economic insecurity in Human Security, where individuals or groups lose their ability to meet basic needs due to external factors beyond their control.

Meanwhile, in the dimension of environmental security, this research shows that land degradation, aging plantations, and imbalanced production inputs pose serious threats to the sustainability of agricultural ecosystems. The Human Security theory views environmental threats not only from an ecological standpoint but also as factors that undermine the social and economic stability of communities. In the case of Ketapang, environmental damage caused by unsustainable farming practices and a lack of plant regeneration results in long-term productivity decline, ultimately worsening farmers' economic conditions. Thus, economic security and environmental security interact to create a vulnerability cycle that deepens social instability.

The vulnerability experienced by independent farmers can also be examined through the lens of Dependency Theory, which highlights the imbalance in the relationship between core and peripheral actors in the global economic system. In the context of the palm oil industry, Indonesia, as a major producer, occupies a peripheral position, dependent on the demand and regulations of developed countries (core). When core countries impose policies such as the EUDR or high certification standards, producing countries, particularly independent palm oil farmers, are required to adapt without a balanced bargaining position. This phenomenon demonstrates how the global market structure reinforces dependency patterns, where the greatest value-added from palm oil commodities is enjoyed by upstream actors (processors, exporters, and international buyers), rather than by the producing farmers. Dradjat (2016) and Kamim & Abrar (2020) emphasize that such global market pressures can widen the socio-economic gap between actors in the palm oil value chain.

From an Environmental Justice perspective, the vulnerability of independent farmers also reflects a form of ecological injustice, where the burden of complying with complex sustainability standards is placed

on the group that contributes the least to global environmental damage. Independent farmers in Ketapang are not the main drivers of deforestation, as they generally manage land that has already been cleared for some time. However, they become the most affected group by global policies that prioritize "deforestation-free" labeling without considering local capacity. This creates a moral dilemma in the application of sustainability principles: on one hand, such regulations are crucial for environmental protection; on the other hand, without inclusive transition support, these regulations could marginalize vulnerable communities.

When linked to the concept of inclusive sustainable development, the findings of this study emphasize the importance of shifting policy focus from mere administrative compliance to enhancing farmers' adaptive capacity. Sustainable palm oil development should not be solely measured by how well the commodity meets global environmental standards, but also by how well the policies contribute to improving the socio-economic well-being and resilience of local communities. In line with the views of Suwarno (2019) and Latipah et al. (2018), a just sustainability approach must ensure that each actor in the value chain has proportional access to economic benefits, technology, and information. In the context of Ketapang, this means the need for regional policies that actively strengthen cooperative capacities, support replanting through soft financing, and build an integrated traceability hub system to ensure the participation of independent farmers in the global market.

By integrating the three main theories of Social Vulnerability, Access, and Human Security, it can be concluded that the social vulnerability of independent palm oil farmers in Ketapang is multidimensional. This vulnerability arises not only from individual or local economic factors but also from the interaction between global structures and local social capacities. Therefore, solutions to this vulnerability cannot solely rely on top-down economic or environmental policies, but rather require a systemic approach that simultaneously integrates social empowerment, economic justice, and ecological sustainability.

Implications

The implications of this study indicate that the social vulnerability of independent palm oil farmers in Ketapang District, West Kalimantan, remains very high due to global market pressures, particularly regulations from the European Union such as the EUDR, which aims to reduce deforestation. Although this policy is intended for environmental sustainability, it does not fully account for the conditions faced by independent farmers, who encounter significant barriers in meeting the certification standards required to access international markets. Independent farmers struggle to access adequate information and have limited financial resources to meet these requirements. Additionally, overlapping authority between various relevant government agencies exacerbates this situation.

Based on these findings, this study recommend that the Indonesian government strengthen social protection policies that are more adaptive to the needs of independent farmers, taking into account the challenges they face in meeting international standards. This includes providing broader access to global market information and more affordable supporting resources, as well as simplifying the certification process. Furthermore, there is a need for better coordination between the central and local governments, as well as other relevant institutions, to reduce the overlap of authority in the management of palm oil plantations, ensuring that policies are more efficient and focused on the needs of independent farmers. These efforts are expected to reduce the social vulnerability of independent palm oil farmers and enhance their competitiveness in the global market, while also promoting a more sustainable palm oil industry in Indonesia.

Conclusions and Limitations

This study demonstrates that the social vulnerability of independent palm oil farmers in Ketapang District is not an isolated issue, but rather a result of the intersection between internal weaknesses and external pressures from the global market. From the internal perspective, vulnerability arises due to weak farmer institutions, limited land legality, restricted access to financing, and declining productivity due to aging plantations. From the external perspective, international policies and regulations such as the European Union Deforestation Regulation (EUDR) and the demands for sustainability certification (ISPO and RSPO) add additional adaptation burdens for independent palm oil farmers who are not economically and institutionally prepared. According to Social Vulnerability Theory (Cutter, 1996), this situation reflects a high level of exposure to global market changes, which is not matched by adequate adaptive capacity. Based on the Access Theory (Ribot & Peluso, 2003), farmers own land and produce crops but lack control over the value chain and policies that determine prices. In the framework of Human Security (UNDP, 1994), their condition reflects threats to both economic security and environmental security, which mutually reinforce each other, creating a cycle of recurring vulnerability. Overall, this study emphasizes that the social vulnerability of independent palm oil farmers in Ketapang is a reflection of the imbalance between global sustainability demands and local adaptive capacity. Therefore, efforts toward equitable sustainability not only require compliance with international standards but also the strengthening of social, economic, and institutional capacities at the grassroots level, so that farmers are not merely subjects of global policies, but can become active participants in a sustainable value chain.

The limitations of this study its focus solely on the social vulnerability of independent palm oil farmers in Ketapang District, West Kalimantan, who are confronted with pressures from global market policies. This study only provides an overview of the impact of global market policies on independent farmers, without delving deeper into other factors that may exacerbate their vulnerability, such as access to information, capital, and government protection policies. We suggest that future research explore these factors and examine more comprehensively how government policies and global markets can collaborate to improve the welfare of independent farmers, including the impact of international certification policies on them.

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