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Research Article

Negotiating Livelihood Resilience: Everyday Strategies of Independent Oil Palm Smallholders Facing Market and Policy Shocks

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Abstract

Oil palm cultivation has contributed significantly to poverty reduction and rural development in Indonesia, with independent smallholders managing a substantial share of the national oil palm area and playing a key role in the sector's long-term sustainability. Yet these farmers are increasingly exposed to intertwined market and policy shocks, including volatile crude palm oil (CPO) prices, abrupt domestic regulatory changes, and emerging international sustainability regulations such as the EU Deforestation Regulation (EUDR). This qualitative literature review synthesizes recent empirical and conceptual work published since 2020 to examine how independent oil palm smallholders in Indonesia negotiate resilience in their livelihoods amid such shocks. Building on the Sustainable Livelihoods Approach and contemporary resilience theory, the article identifies three broad sets of strategies: absorptive strategies that enable households to endure short-term income shocks; adaptive strategies that involve livelihood and agronomic adjustments; and transformative strategies that seek to alter structural conditions through collective action, engagement with certification, and participation in state programmes. The review shows that smallholders' ability to deploy these strategies is shaped by differential access to livelihood capitals, land tenure security, value-chain power relations, and the design and implementation of public policies. The article argues that resilience should be understood as a negotiated, context-specific process rather than a fixed attribute. It proposes policy directions to strengthen independent smallholders' contributions to an inclusive and sustainable palm oil sector in Indonesia.

JEL Classification: Q12; Q18; O13; Q56; Q15

Introduction

Background and context

Indonesia is the world's largest producer and exporter of palm oil, accounting for more than half of global output and providing employment and income opportunities for millions of rural households. Within this national success story, independent oil palm smallholders occupy a central yet often under-recognized position: they manage roughly one-third to two-fifths of Indonesia's oil palm area, typically operating outside formal contract schemes and exercising substantial control over land use and production decisions. Unlike scheme or plasma smallholders tied to specific companies, independent farmers self-finance the establishment of plantations and rely on a diverse set of market intermediaries, including local traders and multiple mills, to sell their fresh fruit bunches (FFB) [1-4]. Oil palm expansion has improved incomes and living standards for many of these farmers, confirming the crop's potential as a driver of inclusive rural development when enabling conditions are present. At the same time, independent smallholders often operate with limited capital, constrained access to formal credit, insecure land tenure, and partial information about price formation along the value chain. These structural conditions heighten their exposure to both market and policy shocks and shape the repertoire of strategies they can use to sustain their livelihoods over time [5-7].

Urgency of the study

Recent events underscore the urgency of understanding smallholder resilience in Indonesia's palm oil sector. In 2022, a domestic cooking oil crisis led the government to impose a temporary export ban and rapidly adjust domestic market obligation (DMO) policies, causing farm-gate FFB prices to fall by up to 63% in some regions and leaving many farmers unable to sell their harvests. These abrupt policy shifts highlighted how quickly smallholder incomes can be affected by decisions taken far upstream in the value chain [8].

At the same time, new regulatory frameworks in key export markets are reshaping future demand. The EU Deforestation Regulation (EUDR) introduces stringent traceability and legality requirements for palm oil and other commodities, raising concerns that independent smallholders—many of whom lack formal land titles or georeferenced data—could be excluded from high value markets if support mechanisms are not in place. Domestically, Indonesia's biodiesel policy, including the B35 mandate, has increased the share of CPO channelled to energy use, with implications for price formation and export volumes that also reverberate back to producers [9-11].

Parallel to these market and policy dynamics, Indonesia is rolling out a more assertive sustainability agenda centered on the mandatory implementation of Indonesian Sustainable Palm Oil (ISPO) certification, and government supported replanting programmes for smallholders (Peremajaan Sawit Rakyat, PSR). While such initiatives can potentially strengthen smallholder resilience and long-term competitiveness, recent studies document significant barriers related to land legality, institutional capacity, transaction costs, and asymmetric access to information [12-14].

Research objective and question

Against this backdrop, there is a growing recognition that independent smallholders' livelihood resilience is both crucial to the sustainability of Indonesia's palm oil sector and still insufficiently understood. The objective of this article is therefore to synthesize recent empirical and conceptual work on how independent oil palm smallholders negotiate resilience in the face of market and policy shocks [15]. The guiding research question is: What livelihood strategies do independent oil palm smallholders in Indonesia employ to navigate resilience amid market volatility and policy disruptions, and how are these strategies shaped by structural conditions and policy frameworks? [7]. By addressing this question through a qualitative literature review, the article aims to inform both academic debates on livelihood resilience and practical policy discussions on how to better support independent smallholders as constructive partners in an inclusive and sustainable palm oil economy [16].

Literature Review

Conceptualizing livelihood resilience

The Sustainable Livelihoods Approach (SLA) provides a widely used framework for analyzing how rural households construct and sustain livelihoods amid change and uncertainty. In this framework, livelihood outcomes depend on households' access to and deployment of five types of capital assets—human, social, natural, physical, and financial—within a broader vulnerability context characterized by shocks, trends, and seasonality. The SLA has been applied to diverse commodity systems, including palm oil, to understand how combinations of assets and institutional arrangements shape livelihood opportunities and trade offs [17-19]. Recent advances in resilience theory complement the SLA by distinguishing between different capacities that enable households and communities to deal with disturbances: absorptive capacity (withstanding and coping with shocks), adaptive capacity (adjusting and learning), and transformative capacity (effecting structural changes in the systems that generate vulnerability). These capacities can coexist and interact, and are not necessarily sequential; for example, households may simultaneously deploy short-term coping strategies while engaging in longer-term adaptations [15]. A research applied Speranza's resilience framework to Indonesian palm oil smallholders, using survey data to examine how buffer capacity, self-organization, and learning capacity correlate with observed resilience outcomes. Their findings suggest that the relationship between these resilience dimensions and actual post shock recovery is more complex and context-dependent than linear models often assume, underscoring the value of qualitative, context sensitive analyses [7].

Market shocks in the palm oil sector

Market shocks are a recurrent feature of global commodity systems, and palm oil is no exception. Price volatility can result from shifts in global demand, movements in related vegetable oil markets, currency fluctuations, weather events affecting yields, and policy decisions in major producing and consuming countries. For smallholders, these fluctuations are mediated by local market structures and power relations, which shape the transmission of changes in international CPO prices to FFB prices at the farm gate [8,20,21]. A recent case study from West Sumatra shows that price transmission from mills to independent smallholders is asymmetric: price decreases in global or domestic markets are passed on rapidly and fully to producers, whereas price increases are transmitted more slowly and often partially, reflecting the oligopsonistic position of mills and intermediaries. Such asymmetry can erode the benefits of favorable market conditions for smallholders, while leaving them fully exposed to downturns [22].

The 2022 export ban provides a concrete illustration of how policy induced market shocks can materially affect smallholder livelihoods. Based on a combination of price data and farmer interviews, it has been estimated that the ban and related policy adjustments led to an average short-term decline of around 63% in the FFB price for independent smallholders across several provinces [8]. Many farmers reported selling below production costs or temporarily halting harvesting because local mills and traders had limited storage capacity or imposed restrictive purchase conditions [20,23,24].

Policy shocks and regulatory change

Policy shocks emerge when regulatory changes significantly alter incentives, constraints, or expectations for actors in the value chain, often over short time periods. In Indonesia's palm oil sector, the interplay between domestic policies (e.g., export taxes, DMO, biodiesel mandates, land-use regulations) and international measures (e.g., EUDR, voluntary sustainability standards) creates a complex and evolving policy environment for smallholders [25-27].

Domestically, frequent adjustments to export levies, DMO quotas, and price stabilization mechanisms introduce uncertainty for mills, traders, and producers, complicating long term planning and investment decisions. Internationally, the EUDR requires operators placing palm oil on the EU market to demonstrate that products are deforestation free and comply with relevant legislation in the country of production, including land tenure laws. Because a significant share of independent smallholders cultivate oil palm on land with unclear legal status or formal titles, they risk being excluded from EUDR-compliant supply chains unless measures are taken to address these legal and technical constraints [28,29].

At the same time, Indonesia is strengthening its domestic sustainability regime by mandating ISPO certification for all producers, including smallholders, within a defined transition period. Empirical studies show that independent smallholders face substantial challenges in meeting ISPO and RSPO requirements, particularly regarding land legality, documentation, group organization, and audit and compliance costs. These challenges are not insurmountable, but they require targeted support and inclusive policy design to ensure that sustainability standards function as enablers rather than barriers for smallholders [30,31].

Emerging evidence on smallholder resilience

Recent empirical work underscores the heterogeneity of livelihood resilience among oil palm smallholders in Indonesia. Using the SLA and latent class analysis, Hendrawan and colleagues identify five classes of smallholders—from "vulnerable" to "adaptive"—based on their resilience scores across the five capital assets. They find that the least resilient group is predominantly composed of older, local farmers who established plantations independently and have limited access to formal support, while the most resilient group is mostly transmigrant farmers who previously benefited from government programmes [4,32].

Other studies focus on specific resilience determinants, such as access to replanting support, participation in farmer organizations, degree of livelihood diversification, and engagement with sustainability certification. Collectively, this literature points to three broad families of strategies—absorptive, adaptive, and transformative—through which independent smallholders seek to manage and shape their exposure to market and policy shocks, as elaborated in the findings section below [32,33].

Methodology

Qualitative literature review design

This article adopts a qualitative (narrative) literature review design rather than a systematic review, aiming to provide an interpretive synthesis of recent scholarship on resilience among independent oil palm smallholders in Indonesia. Narrative reviews are particularly suited to emerging or complex topics where the literature spans multiple disciplines, methods, and conceptual lenses, and where the goal is to identify overarching patterns, theoretical insights, and policy implications rather than to quantify effect sizes [34,35].

In contrast to systematic reviews that follow highly structured protocols (e.g., PRISMA) with predefined inclusion–exclusion criteria and formal risk of bias assessment, this qualitative review relies on iterative reading, conceptual mapping, and thematic synthesis. The choice of approach reflects the diversity of sources relevant to independent smallholder resilience, which include peer-reviewed journal articles, book chapters, policy briefs, and reports from research institutes and civil society organizations [36].

Literature search and selection

The review focuses on literature published from 2020 onwards, supplemented by a small number of earlier foundational works where necessary to clarify concepts or provide background. Searches were conducted in Scopus, Web of Science, and Google Scholar using combinations of keywords such as "independent oil palm smallholders," "livelihood resilience," "market shocks," "policy shocks," "Indonesia," "export ban," "EUDR," "replanting," "ISPO," and "certification." Additional relevant materials were identified through backward and forward citation tracking, as well as targeted searches on the websites of specialized organizations such as CIFOR ICRAF, Climate Policy Initiative, and RSPO.

Studies were included if they (1) focused on Indonesia; (2) examined independent smallholders or mixed smallholder populations where independent farmers formed a substantial subgroup; and (3) addressed at least one element of market or policy shocks

and/or smallholder livelihood strategies and resilience. Both quantitative and qualitative studies were considered, but the synthesis emphasizes qualitative insights and conceptual contributions, in line with the review's aims [37].

Thematic synthesis and analytical framing

Selected studies were read in full and coded for key themes related to (a) types of shocks; (b) strategies and responses; (c) determinants of resilience (capital assets, institutions, policies); and (d) implications for sustainability standards and policy frameworks. These themes were then organized under the three capacities—absorptive, adaptive, and transformative—while retaining attention to cross cutting issues such as land tenure, gender, and regional diversity. The Sustainable Livelihoods Approach provided the overarching lens for interpreting how different combinations of assets and institutions enable or constrain specific strategies [36,38].

Results: Thematic Findings

Absorptive strategies: enduring short term shocks

A first cluster of strategies aims to help households absorb short term income shocks without fundamentally changing their livelihood portfolio. One widely documented response to FFB price drops is adjusting household expenditure, including postponing nonessential purchases, reducing consumption of purchased foods, and drawing down savings or taking out informal loans. In some communities, households also rely on reciprocal support within extended families and neighborhood networks, drawing on bonding social capital to smooth consumption [39-42].

During the 2022 export ban, many independent smallholders continued to harvest and sell FFB despite prices falling below production costs, mainly because stopping production entirely would mean losing the only immediate source of cash and risking fruit spoilage. Some farmers reported temporarily accepting payments in instalments or non cash forms from local traders, reflecting the strength of long standing patron–client relationships but also their limited bargaining power. These absorptive strategies can be effective in the short run, yet they may also erode financial buffers and increase indebtedness if shocks persist or recur frequently [8,43,44].

Adaptive strategies: adjusting livelihoods and practices

Beyond short term coping, independent smallholders employ adaptive strategies that modify their livelihood systems and farming practices in response to changing conditions. One important avenue is income diversification through non-farm and off-farm activities, such as wage labor in construction, transport, or local industries, small-scale trading, or seasonal migration, which can reduce dependence on palm oil income alone. Studies from East Kalimantan and other provinces indicate that households with more diversified income portfolios were better able to maintain consumption and avoid distress asset sales during periods of price volatility [32,45-47].

Agricultural diversification and intercropping also feature prominently as adaptive strategies. Research in several Indonesian districts shows that smallholders who integrate food crops, fruit trees, and sometimes livestock within or adjacent to oil palm plots enhance both income stability and food security while potentially improving soil health and biodiversity. Recent work on innovative intercropping with rice suggests that, under appropriate management, such systems can contribute to national food security goals without necessarily reducing oil palm productivity over the plantation cycle [16,48,49].

At the farm management level, smallholders often adjust input use and agronomic practices in response to changes in prices and costs. For example, when fertilizer prices rise, or FFB prices fall, some farmers temporarily reduce fertilizer application rates or switch to cheaper sources, balancing short term cash flow needs against potential long-term impacts on yields. Decisions about the timing and modality of replanting are also highly strategic: narrative reviews show that independent smallholders frequently delay replanting aging stands due to the high upfront costs and the prospect of several years without harvest income, especially when access to subsidized replanting programmes is limited [50-53].

Adaptive strategies extend to market engagement as well. Independent farmers often experiment with selling to different traders or mills, using informal networks to identify buyers offering slightly better prices or more favorable grading practices. However, the scope for such adjustments is constrained by transportation costs, local monopsony structures, and information asymmetries, which can limit the potential gains from switching market channels [54-56].

Transformative strategies: pursuing structural change

Transformative strategies involve efforts to alter the structural conditions that shape vulnerability and resilience, often through collective action and engagement with policies and standards. One key pathway is the formation or strengthening of farmer groups and cooperatives that can aggregate FFB, negotiate contracts with mills, facilitate access to inputs and credit, and serve as vehicles for participating in certification schemes or replanting programmes. Evidence from long standing smallholder oil palm schemes suggests that robust farmer organizations are associated with more effective replanting, better access to training, and enhanced bargaining power in price negotiations [23,57].

Engagement with sustainability certification—whether RSPO, ISPO, or combined models—represents another transformative strategy, although uptake among independent smallholders remains limited. Certification can offer potential benefits, including access to certain markets, improved agronomic practices, and, in some cases, price premiums or more stable buyer relationships. However, empirical studies consistently highlight barriers related to land legality, documentation requirements, group organization, and transaction costs, indicating that certification is more accessible to better resourced smallholders unless targeted support and inclusive models (e.g., group certification) are implemented [58-60].

Participation in government-supported replanting programmes (PSR) is another avenue through which smallholders seek to transform their production base. The PSR scheme subsidizes replanting with improved seedlings and aims to enhance the productivity and sustainability of smallholder plantations. Yet narrative reviews and policy analyses show that many eligible independent smallholders face obstacles stemming from overlapping land claims, incomplete documentation, complex application procedures, and insufficient accompaniment during replanting and the immature period. Where these challenges are addressed, however, PSR can significantly strengthen long-term resilience by renewing aging plantations and enabling the adoption of better agronomic practices [12,51,61].

Finally, some smallholder organizations and civil society groups engage in advocacy to influence policies governing the palm oil sector, including demands for more predictable export rules, fairer pricing mechanisms, accelerated land tenure reform, and supportive implementation of sustainability regulations. Such political engagement reflects a transformative orientation that seeks not only to cope with or adapt to shocks but also to change the rules and structures that generate vulnerability in the first place [62-64].

Discussion

Interactions between capitals, strategies, and outcomes

Synthesizing the literature through the lens of the Sustainable Livelihoods Approach reveals that access to and control over the five capital assets strongly shape which strategies independent smallholders can realistically pursue in response to shocks. Financial capital, in the form of savings, credit, and liquid assets, determines whether households can absorb temporary income losses, invest in diversification, or withstand the non productive years associated with replanting. Social capital—including both bonding ties within communities and bridging links to organizations, companies, and state agencies—facilitates the flow of information, mutual support, and collective action [40,51,65, 66].

Human capital, such as education and technical knowledge, influences farmers' ability to access and implement improved agronomic practices, navigate certification requirements, and engage with market information and digital tools. Natural and physical capital, including land quality, farm size, and proximity to infrastructure and mills, further condition the viability of particular strategies and the distribution of benefits from policy interventions. Importantly, these capitals are not evenly distributed among independent smallholders; rather, they underpin the heterogeneity in resilience levels documented in recent quantitative studies [15,67,68].

From a resilience perspective, absorptive, adaptive, and transformative strategies are linked but not strictly hierarchical. Households with limited financial and social capital may rely heavily on absorptive strategies, such as cutting expenditures and borrowing, which can stabilize livelihoods in the short term but do little to reduce structural vulnerability. Those with somewhat stronger asset bases can adopt adaptive strategies like diversification and improved agronomic practices, thereby reducing sensitivity to price fluctuations and other shocks. Transformative strategies—such as engaging in certification or PSR, or building strong cooperatives—require even higher levels of capital

and supportive institutions, but have the greatest potential to alter long-term trajectories [32,33,69].

Structural constraints and policy coherence

The review also highlights several structural constraints that limit the effectiveness and accessibility of resilience strategies for independent smallholders. Land tenure insecurity is a foundational issue: farmers cultivating in areas without formal titles or in state forest zones face difficulties accessing credit, certification, and government programmes, and may be particularly vulnerable to exclusion under the EUDR and similar regulations. Without progress on land legalization and conflict resolution, other interventions may have limited reach among the most vulnerable smallholders [27,70].

Moreover, policy incoherence and volatility can undermine resilience even when specific programmes are well designed. Frequent changes to export levies, DMO rules, and pricing policies create uncertainty for all actors, but particularly for smallholders who lack timely information and buffers against sudden price swings. At the same time, misalignment between domestic standards (ISPO) and international demands (such as EUDR and private certification schemes) risks generating overlapping compliance burdens and transaction costs. Coordinated, multi-level policy dialogue is therefore essential to ensure that efforts to promote sustainability and traceability reinforce, rather than contradict, initiatives to support inclusive smallholder development [31,64,71].

Negotiated resilience and implications for theory

The empirical patterns reviewed suggest that independent smallholder resilience in Indonesia's palm oil sector is best understood as a negotiated and relational process rather than as a static property of households or communities. Farmers continuously adjust strategies in response to evolving market signals, policy changes, and local socio ecological conditions, while also engaging with other actors in the value chain and state apparatus. This negotiated resilience is shaped by power relations and institutional arrangements, including patron–client ties, cooperative governance, and the design of state programmes and sustainability standards [72,73].

The findings also complicate linear models of resilience that assume a progression from absorptive to adaptive to transformative capacities. In practice, many smallholders combine elements of all three, and may cycle between them depending on the nature and intensity of shocks and the long term opportunities available. This underscores the value of integrative frameworks that link livelihood assets, resilience capacities, and governance arrangements when analyzing smallholder responses to complex, multi scalar disturbances [12,74-76].

Conclusion and Policy Recommendations

Substantive conclusions

This qualitative literature review shows that independent oil palm smallholders in Indonesia employ a diverse repertoire of strategies to negotiate for livelihood resilience amid market volatility and policy change. Absorptive strategies, such as consumption smoothing and reliance on social networks, provide important short term buffers but can be insufficient when shocks are deep or prolonged. Adaptive strategies, including income diversification, intercropping, and adjustments to agronomic practices, can strengthen resilience by reducing dependence on a single commodity and improving resource-use efficiency. Transformative strategies—particularly collective action through farmer groups, engagement with certification, and participation in replanting programmes—offer the potential to alter structural conditions and secure longer term gains.

However, access to these strategies is uneven, reflecting underlying disparities in livelihood assets, land tenure security, and institutional support. The least resilient smallholders tend to be older local farmers who established plantations independently, often on land with unclear legal status and limited access to formal programmes and information. Strengthening resilience in this context, therefore, requires not only supporting individual strategies but also addressing the structural factors and policy configurations that shape vulnerability and opportunity.

Policy directions

Several policy directions emerge from the synthesis. First, accelerating land tenure reform and clarifying land rights for independent smallholders are crucial prerequisites for inclusive participation in certification schemes, access to credit, and EUDR compliant supply chains. Second, investment in accessible market information systems, transparent pricing mechanisms, and support for cooperative marketing arrangements can help reduce information asymmetries and improve smallholders' bargaining position. Third, replanting programmes like PSR should be accompanied by simplified procedures, tailored technical assistance, and financial instruments that bridge the non productive period, particularly for smallholders with limited savings.

Fourth, sustainability standards (ISPO, RSPO) and international regulations (EUDR) should be implemented in ways that explicitly recognize smallholder heterogeneity, including phased compliance pathways, group certification models, and targeted subsidies for compliance costs. Finally, greater support for livelihood and crop diversification—through extension services, pilot projects, and integration into regional development plans—can promote resilient rural economies that continue to benefit from palm oil while expanding complementary income and food security pathways.

Adopting such measures in close collaboration with smallholder organizations, local governments, companies, and civil society actors can strengthen the contribution of independent oil palm smallholders to a sustainable, inclusive, and resilient palm oil sector in Indonesia.

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