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Beyond the plantation: Palm oil as a strategic lever for regional development and economic transformation growth in Indonesia

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Abstract

Indonesia's palm oil industry is a key driver of national and regional economic growth, particularly benefiting rural and underdeveloped areas. This study aims to synthesise the constructive contributions of palm oil to local economies by assessing its impact on household income, employment, infrastructure, and regional development. Employing a qualitative integrative literature review, the research systematically analyses over 80 peer-reviewed articles, reports, and academic sources from major databases using thematic content analysis. The findings reveal that palm oil cultivation has significantly increased household incomes, often doubling or tripling them compared to other crops, created over four million direct jobs, and spurred infrastructure improvements such as roads, schools, and healthcare facilities. These developments have contributed to poverty reduction and enhanced social mobility in remote regions. However, the benefits are not uniformly distributed, with smallholders and certain regions receiving a smaller share of economic gains, and persistent challenges related to environmental sustainability and social equity. The practical implications suggest that to sustain and broaden these positive outcomes, policy interventions should prioritise inclusive benefit sharing, support for smallholders, and the adoption of sustainable practices. Strengthening governance and promoting responsible certification schemes are essential to ensure that the palm oil sector continues to drive equitable and sustainable economic transformation in Indonesia.

Keywords: Economic impact, Household income, Indonesia, Infrastructure improvement, Local economy, Palm oil, Regional development, Rural transformation.

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Contribution of this paper to the literature

This paper offers an original, integrative review of Indonesia's palm oil sector, uniquely synthesising multi-scale qualitative evidence to highlight its strategic role in local and regional economic transformation, particularly for rural livelihoods and infrastructure, an area often overlooked in prior literature focused mainly on environmental impacts.

1. Introduction

Over the past few decades, the global demand for agricultural products has increased substantially, driven by rising population numbers, expanding urbanisation, and shifting dietary preferences (Jiang, Seto, & Bai, 2015). Amid these trends, palm oil has emerged as a dominant crop due to its unparalleled productivity per hectare, low production cost, and wide applicability across diverse industries including food processing, pharmaceuticals, cosmetics, and bioenergy (Alhaji et al., 2024). This unique versatility positions palm oil as a critical pillar in sustaining the modern global economy, particularly within the framework of the Sustainable Development Goals (Chiriacò, Bellotta, Jusić, & Perugini, 2022; Dauvergne, 2018).

Although it holds a strong position in the global economy, palm oil remains among the most debated and controversial commodities worldwide, often framed within discourses of accusations for causing environmental degradation, deforestation, and social conflict (Berenschot, Dhiaulhaq, Hospes, & Pranajaya, 2024). There is a significant yet underexplored narrative highlighting the positive contributions of this approach to socio-economic development, particularly in emerging economies (Alwarritzi, Nanseki, & Chomei, 2016). Tackling both aspects is crucial for gaining a well-rounded understanding of palm oil's diverse contributions to sustainable development frameworks (Ayompe, Schaafsma, & Egoh, 2021).

Holding the top position globally in both the production and exportation of palm oil, Indonesia represents the intricate dynamics associated with this commodity (Busch et al., 2022). The sector makes a significant contribution to national economic performance, serving as a key contributor to export income, employment generation, and rural development (Afriyanti, Kroeze, & Saad, 2016). Notably, palm oil cultivation engages approximately 16 million Indonesians across formal and informal sectors, providing a crucial income stream for rural households (Ali, Karimi, & Febriamansyah, 2020). The expansion of palm oil estates across multiple regions has served as a catalyst for regional economic development, enhanced infrastructural connectivity, and stimulated the growth of rural service industries (Krishna & Kubitza, 2021).

At both regional and local scales, the economic effects of palm oil go beyond just its primary production. The sector fosters the emergence of agribusiness networks, stimulates demand for logistics and input supply industries, and encourages both public and private sector investments in infrastructure, including roads, ports, and storage facilities (Dharmawan et al., 2020). These backwards and forward linkages create multiplier effects that reinforce regional economies, support entrepreneurial activities, and increase household consumption capacity (Novita, 2021). Empirical evidence suggests that districts with significant palm oil activities often exhibit higher socio-economic indicators compared to regions with less commodity specialisation (Tonny, Oktarina, Sipayung, Aulia, & Maziah, 2022).

Nevertheless, the distributional outcomes of palm oil-driven development are not uniform. Variations in governance quality, land tenure arrangements, market access, and environmental management practices significantly influence the extent to which palm oil promotes inclusive economic development (Putra & Elida, 2024). In regions characterised by strong institutions and participatory governance, the expansion of palm oil has been correlated with tangible improvements in poverty alleviation, access to education, and health infrastructure (Herdiansyah & Mamola, 2025). Conversely, areas with weak regulatory frameworks risk experiencing economic polarisation, social conflict, and potential environmental impact (Putri et al., 2022).

Despite these complex realities, a disproportionate share of academic discourse remains unfairly focused on the environmental and social externalities of palm oil, often neglecting rigorous analyses of its developmental potential (Shahputra & Zen, 2018). Existing studies tend to emphasise macroeconomic impacts or environmental consequences, with limited attention to the nuanced, multi-scalar economic benefits observable at local and regional levels (Baka, Rianse, & la Zulfikar, 2024). Furthermore, few reviews synthesise qualitative insights across diverse geographic and institutional contexts within Indonesia, leaving a critical gap in the literature (Astari, Lovett, & Wasesa, 2025).

Unlike prior works that predominantly foreground environmental accusation and critiques, this review seeks to critically examine the positive and strategic roles of palm oil in enhancing local and regional economies in Indonesia. It aims to integrate findings from diverse scholarly perspectives, contextualise outcomes within varying governance and socio-economic settings, and offer a holistic framework for understanding palm oil's role in driving sustainable rural economic transformation (Wardhani & Rahadian, 2021).

2. Literature Review

2.1. Global Significance of Palm Oil in Economic Systems

Palm oil has secured a strategic position in the global agribusiness sector, driven by its unparalleled yield per hectare, relatively low production costs, and wide array of end-uses spanning food, cosmetics, pharmaceuticals, and the renewable energy industries (Imoisi, Ilori, Agho, & Ekhator, 2015; Woittiez, Van Wijk, Slingerland, Van Noordwijk, & Giller, 2017). Its role as a critical contributor to global food security and industrial supply chains has prompted significant investments in research and development, particularly in enhancing productivity and sustainability (Paul Jr, Alamsyah, & Sibhatu, 2023). Nonetheless, global discourse often foregrounds environmental criticisms, overshadowing the economic developmental potential of emerging economies (Sibhatu, 2023).

2.2. Palm Oil as a Catalyst for National Economic Transformation in Indonesia

Indonesia's palm oil sector represents a cornerstone of national economic growth, contributing approximately 4–5% to the gross domestic product (GDP) and sustaining millions of livelihoods (Arifin & Putri, 2019). Empirical

studies indicate that palm oil revenues account for a significant portion of Indonesia's export earnings and rural household incomes (Edwards, 2017; Ramadhana, Ahmed, & Thongrak, 2021). The sector's expansion has been strategically aligned with national rural development programs, positioning it as a lever for regional economic convergence and poverty alleviation (Gatto, Wollni, Asnawi, & Qaim, 2017).

2.3. Enhancing Local Economies through Palm Oil Expansion

At the microeconomic level, palm oil cultivation has delivered tangible benefits for local communities, facilitating asset accumulation, access to credit, and improvements in social mobility (Snashall & Poulos, 2023). Integrated smallholder models and corporate-community partnerships have enabled more inclusive participation in palm oil value chains, fostering entrepreneurial activities and rural economic diversification (Radyi et al., 2024; Witjaksono et al., 2024). However, disparities in benefit distribution persist, often shaped by variations in land tenure security, market access, and cooperative governance structures (Macdonald, 2020).

2.4. Regional Development and Infrastructure Enhancement

The growth of palm oil cultivation in diverse areas has been closely linked to enhancements in rural infrastructure, including transportation networks, health facilities, and educational institutions (Krishna & Kubitza, 2021). Infrastructure improvements have not only facilitated agricultural productivity but also stimulated ancillary industries such as logistics, agro-processing, and services, thereby reinforcing regional economic multipliers (Obidzinski, Dermawan, & Hadianto, 2014). Nonetheless, the distribution of infrastructural gains remains uneven, often favouring regions with stronger governance and market linkages (Astuti et al., 2022).

2.5. Employment Generation and Labour Market Dynamics

Palm oil development has created extensive employment opportunities across plantation operations, processing facilities, transportation, and ancillary services (Acosta & Curt, 2019). Studies have demonstrated that palm oil-related employment often offers higher and more stable incomes compared to subsistence farming, thereby contributing to improved living standards (Sudrajat, Suyatno, & Oktoriana, 2021). Yet, concerns remain regarding labour informality, wage disparities, and working conditions, which necessitate stronger labour governance frameworks to ensure equitable outcomes (Pacheco, Schoneveld, Dermawan, Komarudin, & Djama, 2020).

2.6. Challenges and the Need for Inclusive and Sustainable Economic Impacts

Despite the significant economic contributions, the palm oil sector in Indonesia faces persistent challenges, including accusations of causing land conflicts, environmental degradation, and inequitable benefit sharing (Myers, Ravikumar, & Larson, 2015). These challenges underscore the need for comprehensive, context-sensitive policy interventions that promote inclusive economic benefits while safeguarding environmental and social sustainability (Umayah, Purnomo, Fadhlurrohman, Fathani, & Salsabila, 2021). A detailed comprehension of these dynamics is crucial to fully harness the developmental advantages of palm oil without exacerbating existing vulnerabilities.

3. Method

This research employs a qualitative methodology, utilising a literature review, to thoroughly explore the positive and impactful contributions of palm oil in enhancing local and regional economies in Indonesia. The type of qualitative research employed is an integrative literature review, which enables the critical analysis and synthesis of existing studies to develop a nuanced understanding of the financial implications arising from the palm oil sector. It was systematically identified, selected, and interpreted relevant academic works, policy reports, and empirical studies related to the topic. Data collection was conducted through extensive searches in reliable academic databases, including Scopus, Web of Science, and Google Scholar, utilizing search terms such as "palm oil," "economic effects," "local economy," "regional development," and "Indonesia." The selection criteria included peer-reviewed journal articles, government reports, and authoritative institutional publications, primarily from the past decade, to ensure the timeliness and relevance of the results. Exclusion criteria were applied to studies lacking empirical grounding or methodological rigour. The collected literature was managed using Mendeley Desktop for systematic organisation and citation management. Data analysis employed a thematic content analysis approach, where selected documents were read critically and coded according to emerging themes related to economic development. These themes were then synthesised to identify patterns, relationships, and existing gaps in understanding the contribution of palm oil to stimulating local and regional economic growth. Throughout the process, emphasis was placed on maintaining critical reflexivity and ensuring that interpretations were grounded in the evidence presented across diverse sources. This methodological framework enables a comprehensive, critical, and credible overview of the positive contributions of palm oil to Indonesia's economic landscapes at multiple scales.

4. Results and Discussion

4.1. Results

4.1.1. Data Collection Results

Data for this study were collected by systematically analysing over 80 articles published within the past decade. The literature review focused on examining the impact of the palm oil industry on local and regional economies in Indonesia. The selected articles were drawn from well-regarded journals indexed in Scopus, Web of Science, and Google Scholar, ensuring that the research was grounded in credible, peer-reviewed sources. A thorough selection process was employed, with selection criteria centered on the relevance to economic, social, and growth-related aspects associated with the palm oil sector (Purnomo et al., 2020; Sirait, 2022). This review aimed to synthesise a diverse range of perspectives on how palm oil impacts the economy, particularly in rural and underdeveloped regions.

The findings from the data analysis indicate that the palm oil sector plays a pivotal role in driving Indonesia's economic development, particularly by increasing household incomes, creating jobs, and contributing to infrastructure development, which in turn supports other economic sectors. Moreover, the palm oil industry has played a crucial role in promoting regional development, particularly in remote areas that previously had limited access to essential services and infrastructure (Barkah, Sumaryoto, & Rozali, 2024; Yuslaini, Suwaryo, Deliarnoor, & Sri Kartini, 2023).

4.1.2. Economic Contributions at the Local Level

On a local scale, the palm oil sector has generated significant economic benefits, particularly in areas where agriculture is the primary source of livelihood. Data analysis reveals that household incomes in palm oil-producing areas have increased by an average of 2 to 3 times compared to other agricultural commodities, such as rice, maize, or soybeans. Specifically, in regions such as Central Kalimantan and Sumatra, smallholder farmers who transitioned to palm oil cultivation reported income increases of 150% to 250%. These growths were mainly ascribed to the increased profitability and steady global demand for palm oil (Euler, Krishna, Schwarze, Siregar, & Qaim, 2017).

Further supporting these findings, a World Bank report revealed that palm oil contributes over 10% of Indonesia's total agricultural income, generating about $20 billion annually for the national GDP (Aswicahyono & Rafitrandi, 2018). Additionally, the export of palm oil has been instrumental in enhancing Indonesia's economic growth, with Indonesia established as a top global producer and exporter of palm oil. According to information from the Indonesian Palm Oil Association (GAPKI), nearly half of the nation's total agricultural exports consist of palm oil shipments, underscoring the industry's pivotal role in global trade and Indonesia's economic standing (Rosyadi, Mulyo, Perwitasari, & Darwanto, 2021).

Additionally, the palm oil sector has generated more than 4 million direct jobs across its entire supply chain, encompassing workers in plantations, processing facilities, and transportation and logistics (Xin, Sun, & Hansen, 2021). In addition to employment, the sector has enhanced the livelihoods of smallholder farmers by providing access to new technologies and training programs designed to improve agricultural productivity. Data show that palm oil productivity per hectare in Indonesia has increased by 20% to 25% over the last decade, primarily due to technological innovations and more efficient farming practices adopted by both smallholders and large-scale plantation companies (Soliman, Lim, Lee, & Carrasco, 2016).

4.1.3. Regional Economic Impacts

At the regional level, the palm oil sector has played a crucial role in accelerating infrastructure development, particularly in previously underserved or remote areas. This involves the development of essential infrastructure, such as highways, harbours, and transport systems, which not only supports the palm oil industry but also promotes economic diversification across other sectors. For example, in West Kalimantan, the development of transportation networks linked to palm oil production has connected over 20 districts and cities, providing better market access for other local agricultural products and enabling the efficient transportation of goods and individuals throughout the region (Prabowo, Maryudi, & Sena, 2018; Ramadhan, Salman, Mori, & Abdoellah, 2023).

The influence of palm oil on regional development goes beyond infrastructure, encompassing the delivery of essential services. A variety of studies have highlighted that palm oil companies allocate significant resources to corporate social responsibility (CSR) programs, especially in education, healthcare, and community development. Palm oil companies in Sumatra and Kalimantan have collectively invested over $200 million in corporate social responsibility (CSR) initiatives, including the construction of more than 200 schools and 75 healthcare clinics in rural areas (Haq, Basuni, & Sunkar, 2020; Sugino, Mayrowani, & Kobayashi, 2015). These investments have not only improved the living standards in palm oil-producing areas but also promoted social mobility and contributed to poverty reduction.

Moreover, palm oil-generated income has significantly contributed to improving living standards in these regions. The implementation of palm oil cultivation has led to a 30% decrease in poverty rates across several palm oil-producing districts in Sumatra and Kalimantan. This economic upliftment is evident in the rise of local entrepreneurship, including the growth of small and medium-sized enterprises (SMEs) that support the palm oil industry and its related sectors, such as logistics, packaging, and manufacturing (Alamsyah et al., 2023; Sukiyono et al., 2024).

4.1.4. Environmental and Social Challenges

Despite the significant economic benefits, the palm oil sector faces substantial challenges, particularly in terms of environmental sustainability and social equity. A key issue is the accusation of deforestation associated with the growth of palm oil estates. Over the past two decades, Indonesia has cleared more than 3 million hectares of previously designated forest in various forms for palm oil cultivation, raising concerns about the potential loss of biodiversity and changes to ecosystems (Vijay, Pimm, Jenkins, & Smith, 2016; Yasinta & Karuniasa, 2021). The rapid expansion of palm oil estates in some cases has led to the relocation of local populations and altered local ecosystems, particularly in areas such as Sumatra and Kalimantan (Andrianto, Komarudin, & Pacheco, 2019).

Furthermore, there are ongoing concerns about the distribution of the prosperity generated by the palm oil sector. While large corporations in the sector reap substantial profits, smallholder farmers often receive relatively smaller benefits. Smallholders receive about 15% of the total revenue generated by the palm oil sector, with many facing challenges related to wages and harsh working conditions in remote areas, which may limit their access to resources. These problems, despite the significant economic contributions of the sector, underscore the need for policy reforms that address these social disparities (Dib, Alamsyah, & Qaim, 2018; Pichler, 2015).

4.1.5. Concluding Insights from Data and Analysis

Based on the data collected and analyzed, it can be concluded that the palm oil sector has significantly benefited Indonesia's local and regional economies. On a local level, the industry has significantly increased household incomes, generated millions of jobs, and facilitated the adoption of advanced farming techniques, all of which contribute to a more sustainable livelihood for many Indonesian families. At the regional level, palm oil has driven infrastructure development, improved social services, and contributed to a notable reduction in poverty rates.

Nonetheless, the industry's swift expansion has given rise to several environmental concerns, including accusations of deforestation and alterations in biodiversity. Furthermore, the unequal distribution of wealth generated by the palm oil sector remains an issue. As a result, it is essential for future policies to prioritize sustainability, social fairness, and environmental safeguards to promote a more equitable distribution of the palm oil sector's benefits while mitigating its potential adverse environmental effects.

5. Discussion

The results of this study demonstrate the substantial impact of the palm oil sector on driving economic growth at both the local and regional levels in Indonesia. The data analysis highlights the significant contribution of the palm oil sector in increasing household incomes, creating job opportunities, stimulating infrastructure development, and enhancing social welfare in diverse regions (Chiriacò et al., 2022; Nurfatriani, Sari, Saputra, & Komarudin, 2022). Smallholder farmers involved in palm oil production have seen their household incomes increase by two to three times compared to those engaged in traditional agricultural commodities (Mehraban, Kubitza, Alamsyah, & Qaim, 2021; Syahza, Tampubolon, Irianti, Meiwanda, & Asmit, 2023). This financial uplift has led to improvements in living standards and greater economic resilience, especially in rural regions where palm oil farming has become established.

Employment creation remains a cornerstone of the industry's positive economic influence. Over four million jobs have been generated directly through the palm oil sector, establishing itself as one of the biggest sources of employment within Indonesia's agricultural industry (Santika et al., 2019; Ward et al., 2021). These job opportunities are not limited to plantation workers but also extend to logistics, processing, and export activities, thereby strengthening a regionally diversified economy. Technological advancements and training programs, which have been actively supported by industry stakeholders, have resulted in a 20%-25% increase in productivity per hectare, thereby enhancing agricultural efficiency (Abate, Bernard, de Brauw, & Minot, 2018; Abdul, Wulan Sari, Haryanto, & Win, 2022).

Infrastructure development has closely followed the growth of palm oil estates, especially in previously underserved regions. The development of roads, ports, and transportation centers linked to the palm oil sector has improved access to markets, not only for palm oil but also for other local agricultural products, thereby amplifying overall economic diversification (Hasudungan, Raeskyesa, & Fromm, 2024). The significant investment in corporate social responsibility (CSR) programs has led to the establishment of over 200 schools and 75 healthcare clinics, resulting in substantial improvements in public services in remote communities (Limbong, 2017; Lubis, 2018).

At the regional level, the economic stimulus provided by the palm oil sector has been instrumental in reducing poverty rates by 30% in several palm oil-producing districts (Baudoin, Bosc, Bessou, & Levang, 2017). The sector has also promoted the growth of small and medium-sized businesses (SMEs), which support ancillary industries, such as packaging, logistics, and manufacturing (Muda, Sihombing, Jumilawati, & Dharsuky, 2016).

However, while the economic benefits are substantial, the palm oil industry faces considerable obstacles, particularly in terms of sustainability issues and ensuring a more equitable distribution of wealth. Accusation of deforestation remains a critical issue (Chiriacò et al., 2022; Gaveau et al., 2022). Additionally, smallholder farmers continue to receive disproportionately relatively lower benefits from the sector, capturing less than 15% of the total revenue generated (Jelsma, Woittiez, Ollivier, & Dharmawan, 2019). These disparities underscore the need for robust policy interventions that address both sustainability issues and promote more equitable economic growth.

This study highlights the need for a more comprehensive and sustainable approach to managing Indonesia's palm oil industry. Subsequent studies should investigate policy models that harmonise economic development with environmental issues and social equality. Investigating the effectiveness of sustainable certification programs, such as RSPO and ISPO, is crucial to understanding their role in mitigating environmental issues and ensuring long-term sustainability (Hidayat, Offermans, & Glasbergen, 2018). Additionally, longitudinal studies should assess the durability of the economic benefits for smallholders and the capacity of rural economies to withstand volatility in global markets (Hendrawan, Chrisendo, & Musshoff, 2024). Additional studies are needed to evaluate the long-term social impacts of corporate social responsibility (CSR) programs, particularly in areas such as education, healthcare, and poverty alleviation (Freeman, Foley, Anaf, Nosworthy, & Baum, 2025; Gautam et al., 2023).

In summary, while the palm oil sector has played a key role in enhancing Indonesia's local and regional economic development, securing its long-term sustainability demands a comprehensive strategy that incorporates economic, environmental, and social dimensions. Research focusing on policy development, sustainable agricultural practices, and inclusive growth strategies will be essential to fostering a more balanced and equitable economic transformation.

6. Conclusion

This research confirms the vital contribution of the palm oil industry to the progress of Indonesia's local and regional economies. Overall, the sector has made substantial contributions in terms of increasing household incomes, generating employment, and driving infrastructure development. Specifically, smallholder farmers involved in palm oil cultivation have experienced substantial income growth, leading to an improved quality of life and enhanced economic stability in rural communities. Additionally, the palm oil industry has created over four million direct jobs across various sectors, including plantations, processing, logistics, and export, making it one of the largest employers in Indonesia's agricultural sector.

Infrastructure development is another critical outcome of the palm oil industry's expansion, particularly in previously underserved regions. The establishment of roads, ports, and logistics hubs has not only facilitated the distribution of palm oil but also supported market access for other local agricultural products, leading to greater economic diversification. Furthermore, the sector's contribution to social development through corporate social responsibility (CSR) programs is evident in the construction of over 200 schools and 75 healthcare clinics, improving access to basic services in remote areas.

However, despite these significant positive impacts, the palm oil sector is likewise confronted with major challenges, particularly concerning sustainability issues and relatively wealth distribution. Additionally, while large corporations in the sector reap substantial profits, smallholder farmers often receive a relatively smaller fraction of the total revenue generated, hence the necessity to improve their share for economic equality within the industry.

Nevertheless, the results highlight that the palm oil sector has considerable potential to support Indonesia's ongoing economic development, provided that policies focusing on environmental sustainability and more equitable wealth distribution are implemented. Therefore, efforts to promote sustainable palm oil certification schemes and inclusive smallholder participation programs are crucial for achieving more balanced and sustainable development in the future.

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