

## SUSTAINABLE PALM OIL INDUSTRY DEVELOPMENT AND ITS IMPLICATIONS FOR POVERTY ALLEVIATION IN ACEH

Bustanul Aulia

Sekolah Tinggi Agama Islam Tgk. Chik Pante Kulu Banda Aceh

[bustanul.aulia@pantekulu.ac.id](mailto:bustanul.aulia@pantekulu.ac.id)

### ABSTRACT

This study analyzes the role of the palm oil industry in supporting sustainable development (SDGs) and poverty reduction efforts in Aceh, Indonesia, focusing on the sector's contribution and implemented government policies. Palm oil is an important commodity used in various products that significantly contribute to the Indonesian economy, reaching CPO production of 48.4 million tons in 2019. This industry has been proven to create income for communities in palm oil-producing areas, and palm oil plantations can increase farmers' incomes 5–10 times higher than non-palm oil farmers. Palm oil's contribution to the SDGs includes poverty alleviation (SDG-1), hunger reduction (SDG-2), clean energy (SDG-7), and decent work and economic growth (SDG-8). However, this industry also faces serious challenges, including land conflicts, deforestation, and other environmental impacts that risk biodiversity and climate change. Although Aceh has extensive palm oil plantations, poverty remains a major problem — Aceh Singkil, which has the largest plantations, is in fact the poorest district in Aceh. The Indonesian government has committed to sustainable development in the palm oil industry through regulations such as Presidential Regulation No. 44 of 2020 and the implementation of ISPO, RSPO, and ISCC certification. However, with ISPO certification reaching only approximately 35% by the end of 2023, this demonstrates the need for intensive efforts, as well as education and training for smallholder farmers. This study uses a literature review and analysis of data from the Central Statistics Agency (BPS) to identify the relationship between government policies, sustainable development, and poverty levels. While the palm oil industry has significant potential for poverty alleviation, success will depend heavily on effective policy implementation, sustainable practices, and equitable distribution of benefits to address existing social and environmental challenges.

**Keywords:** Palm Oil, Sustainable Development, SDGs, Poverty, Aceh, Government Policy.

### INTRODUCTION

Palm oil is a product derived from the oil palm plant, processed into a range of base oils and used in people's daily lives for example, cooking oil, cosmetics, processed foods, and bio-lubricants (Fathullah et al. 2023). Effective collaboration between government, industry, and local communities is essential to promote sustainable practices and address social issues, including poverty (Limaho, Pramono, and Christiawan 2022). In 2019, Indonesia's CPO production from palm oil reached 48.4 million tons, with 62% coming from smallholder plantations, 34% from private large-scale plantations, and 4% from state-owned plantations (BPS, 2019). Far from being an ordinary tree, oil palm has become a driver of the Indonesian economy through plantation investment by regional companies and community plantations. The palm oil sector also drives other sectors such as trade, transportation services, banking, the HoReCa (hotel, restaurant, and catering) sector, and the livelihoods of communities working in oil palm plantations. According to a PASPI study (2022), palm oil villages experienced significantly higher economic growth compared with villages without oil palm. The contribution of oil palm plantations has increased regional GDP (PDRB), positioning palm oil as the economic backbone of oil-palm-producing regions. Beyond that, palm oil has a significant impact on reducing poverty, improving infrastructure, boosting local economies, and supporting national development. Oil palm plantations have transformed remote, isolated areas into economically advanced regions.

The palm oil industry is a highly strategic sector for Indonesia, demonstrating its role in achieving the SDGs through contributions to the economic, social, and environmental pillars of



development. The Sustainable Development Goals (SDGs) serve as a global development platform established by the United Nations (UN) in 2015, with Indonesia as one of the member states that ratified the SDGs, committing to their achievement over the 2015–2030 period (Pratama, Purnomo, and Agustiyara 2020). Indonesia has strongly committed to the SDGs, as reflected in Presidential Regulation No. 59 of 2017 and Presidential Regulation No. 111 of 2022. The SDGs are built on five guiding principles for achieving sustainable economic, social, and environmental goals, known as the 5 Ps: People, Planet, Prosperity, Peace, and Partnership. These five principles are embodied in 17 SDGs and 169 targets to be achieved by 2030. The core aim is to promote sustainable and continuous economic growth and welfare while opening opportunities for employment, business, innovation, inclusive industry, adequate infrastructure, clean energy, and partnership support. The oil palm industry has multiple agricultural functions, inherently comprising economic, socio-cultural, water-resource conservation, and natural-resource preservation functions (PASPI 2024) (Aldington, 1998; Huylenbroeck et al., 2007; PASPI Monitor, 2021). At the global level, palm oil is used not only for food processing but also, more importantly, in the biodiesel industry, owing to its relatively competitive price, large volume, and stable year-round supply (PASPI Monitor 2021).

Community-owned oil palm plantations in Aceh Province cover more than 200 hectares, supported by improving prices each year and continued government support through various means such as seedling assistance, plantation replanting, and other initiatives benefiting Aceh's smallholder plantations. Based on data from the Central Statistics Agency (BPS) of Aceh Province up to 2022, the largest oil palm plantation area is found in Aceh Singkil Regency, covering 33,050 hectares with a production of 80,153 tons per hectare, while four regencies have no oil palm plantations at all: Banda Aceh, Sabang, Aceh Tengah, and Gayo Lues. The oil palm sector has a significant social impact, particularly on the welfare of communities dependent on the industry. However, despite the extensive oil palm plantations in Aceh, poverty remains a major challenge — Aceh Singkil, which has the largest plantation area, is in fact the poorest regency in Aceh. This can occur because land management is controlled by companies that do not contribute to community welfare, while community income also affects daily livelihoods. Income levels are often used to differentiate between developed and developing countries.

## LITERATURE REVIEW

The SDGs constitute a global agenda aimed at eliminating poverty in Aceh, which has the highest poverty rate in Sumatra at 14.64%. A study by Rizal (2023) found that factors such as direct government spending, unemployment, and the Human Development Index (HDI) significantly influence poverty in Aceh. The oil palm industry is a strategic sector supporting poverty alleviation; according to PASPI (2020), achievement of the SDGs encompasses 16–17 goals, including increasing farmers' income and sustainable rural development. This indirectly opens new centers of economic growth. However, a study by Barus and Ernah (2024) shows that oil palm plantations have both positive and negative impacts, including income-distribution inequality and low productivity. An integrative approach is therefore needed to ensure that the oil palm industry genuinely supports the SDGs. The Aceh government has launched the Aceh Sustainable Palm Oil Roadmap 2023–2045 through Governor Regulation No. 9 of 2024 to realize a deforestation-free supply chain and improve farmers' welfare through three pillars: strengthening governance, multi-stakeholder partnerships, and green financing. ISPO and RSPO certification are being promoted to enhance sustainable competitiveness.

## RESEARCH METHOD

The research method used in this journal is a literature review, conducting a comprehensive review to gain an in-depth understanding of the Sustainable Development Goals (SDGs), with 17 targets to be achieved covering social, economic, and environmental aspects, and 13 SDGs directly or indirectly related to the oil palm sector. Poverty among Aceh's population is the primary indicator of community welfare worldwide. Regarding SDG Indicator 1, the limited assets held by Aceh's population are not necessarily caused by the oil palm plantation industry itself, but rather depend on how directly the government intervenes to ensure proper implementation within the oil palm industry. This review involved collecting and analyzing various highly relevant sources of information, including oil palm journals, articles, books, research data, and other documents. This step aims to obtain accurate information and an understanding of various relevant aspects and factors. In collecting data, this study also draws on empirical studies related to the oil palm industry from prior case studies and publications related to the SDGs. Poverty-analysis data were obtained from the Central Statistics Agency (BPS), along with data on economic growth in Aceh, while data analysis uses a qualitative approach aimed at identifying the relationship between government policy and sustainable development within the oil palm industry — including among smallholder farmers — in order to determine the strengths and weaknesses of existing policies and provide recommendations for future improvement.

## RESULTS AND DISCUSSION

With its tropical climate and fertile soil, Indonesia offers major opportunities for economic growth, and oil palm plantations serve as one sector for sustainable development, expected to help meet the target of reducing the number of poor people worldwide. The five leading palm-oil-producing countries in the world are Indonesia, Malaysia, Thailand, Nigeria, and Colombia. Nevertheless, approximately 17 percent of the world's poor population lives in these five palm-oil-producing countries (World Bank, 2020; PASPI Report, 2021). The SDGs play an important role for the survival of the world's population, with 17 SDG targets to be achieved by 2030. Palm oil is a major commodity for Indonesia's national economy due to exports, employment, and other factors. Oil palm is a valuable resource for Indonesia as a producer of cooking oil, industrial oil, and fuel; as a result, palm oil generates very large outputs, leading to the conversion of older plantations into oil palm plantations. In 2023, Indonesia's palm oil production reached 46.99 million tons, making it the world's largest exporter. Crude Palm Oil (CPO) is one of the key products of the oil palm sector, contributing around 55% of global supply owing to its versatile use in the food, cosmetics, and biodiesel industries. The potential of the palm oil industry is one of the drivers of SDG achievement; the oil palm industry is highly multifunctional, reflecting the SDGs' economic, social, and ecological dimensions. Oil palm plantations have contributed to various SDGs, including poverty reduction (SDG-1), zero hunger (SDG-2), sustainable energy development (SDG-7), inclusive economic growth (SDG-8), health and well-being (SDG-3), quality education (SDG-4), and others. Poverty in Indonesia remains a persistent challenge that must be eliminated for the country to progress and develop. Palm oil has a major influence on reducing poverty through CPO production; the rate of poverty reduction shows that oil-palm-producing regions grow faster than regions without oil palm. However, in reality, some regions still experience poverty despite being located within the oil palm sector. The oil palm industry has become a major pillar of the Indonesian economy, particularly in Aceh Province. According to Susilowati et al. (2020), the oil palm industry



contributes significantly to national Gross Domestic Product (GDP) and creates employment opportunities for local communities. It plays a role in increasing the income of farmers and local entrepreneurs, while also strengthening the regional economy through taxes and levies received by local governments.

The oil palm sector also attracts foreign and domestic investment, infrastructure development, and increased production capacity; palm oil investment operates efficiently and sustainably, ultimately supporting sustainable development (SDGs). It should be noted, however, that the oil palm economy still faces its own challenges, such as social and environmental impacts. Land conflicts between communities and companies have caused local communities to lose access to land due to plantation expansion, while also affecting community social structures. According to Rachman et al. (2020), rapid economic change has eroded traditional lifestyles and local cultural values, underscoring the need for careful decision-making in natural resource management. Large-scale palm oil production is associated with deforestation and greenhouse gas emissions, which can undermine progress toward environmental SDGs (Mohd Hanafiah et al. 2022). Around 23 hectares of tropical forest were destroyed between 2001 and 2020, threatening species such as elephants, tigers, and orangutans with extinction. This also contributes to climate change, as trees that would otherwise absorb carbon dioxide are felled and converted into oil palm plantations. Unsustainable agricultural practices, including the use of pesticides and chemical fertilizers, can contaminate soil and water sources, while soil erosion is a problem in areas with steep slopes. These impacts also affect the health of local communities and their ecosystems. Agroforestry, natural pesticide use, forest-protection policies, and public awareness are therefore essential to minimize the environmental impact of the oil palm industry (Hajad and Maulida 2025).

Indonesia is a member of the United Nations (UN) committed to reducing poverty. Indonesia faces a major challenge related to the gap between the "rich" and the "poor." This disparity is reflected in data from the World Bank: in 2024, the World Bank recorded that 60.3% of Indonesia's population (around 171.8 million people) lived below the poverty line, while the Central Statistics Agency (BPS) recorded a poverty rate of 8.57%, or around 24.06 million people. According to Bappenas, the main strategies for poverty alleviation are: (1) increasing community income, by improving poor communities' access to the labor market through training and skills development to create job opportunities; (2) improving productivity in agriculture, animal husbandry, and fisheries; (3) improving access to financial institutions and capital-financing sources to support MSMEs (micro, small, and medium enterprises); (4) reducing expenditure burdens, through well-targeted social assistance programs such as the Family Hope Program (PKH), non-cash food assistance, subsidy reform, and improved access to health and education; and (5) reducing pockets of poverty, with Bappenas continuously identifying underdeveloped areas, providing infrastructure, and strengthening regional capacity. Under Law No. 17 of 2007 on the 2005–2025 National Long-Term Development Plan (RPJPN), the Indonesian government has incorporated several poverty-alleviation programs in line with the SDG framework. In Aceh, poverty remains a major issue that must be urgently addressed, as BPS data classifies Aceh among the ten provinces with the highest poverty rates in Indonesia.

| Regency/City | Percentage of Poor Population (%) |
|--------------|-----------------------------------|
| SIMEULUE     | 17.69                             |
| ACEH SINGKIL | 19.06                             |

| Regency/City    | Percentage of Poor Population (%) |
|-----------------|-----------------------------------|
| ACEH SELATAN    | 12.02                             |
| ACEH TENGGARA   | 11.99                             |
| ACEH TIMUR      | 13.26                             |
| ACEH TENGAH     | 14.27                             |
| ACEH BESAR      | 17.60                             |
| PIDIE           | 13.21                             |
| BIREUEN         | 18.59                             |
| ACEH UTARA      | 12.10                             |
| ACEH BARAT DAYA | 16.11                             |
| GAYO LUES       | 15.32                             |
| ACEH TAMIANG    | 18.30                             |
| NAGAN RAYA      | 12.17                             |
| ACEH JAYA       | 16.94                             |
| BENER MERIAH    | 12.25                             |
| PIDIE JAYA      | 18.18                             |
| BANDA ACEH      | 18.28                             |

Table note: Table 1

Source: Central Statistics Agency, National Socio-Economic Survey

Note: Poverty calculations were not conducted in September 2023.

Aceh, with its significant oil palm plantations, has become a major source of livelihood for its population, contributing 2.14% of national CPO production. Each 10% increase in production is associated with a 7.7% decrease in poverty (World, 2021).

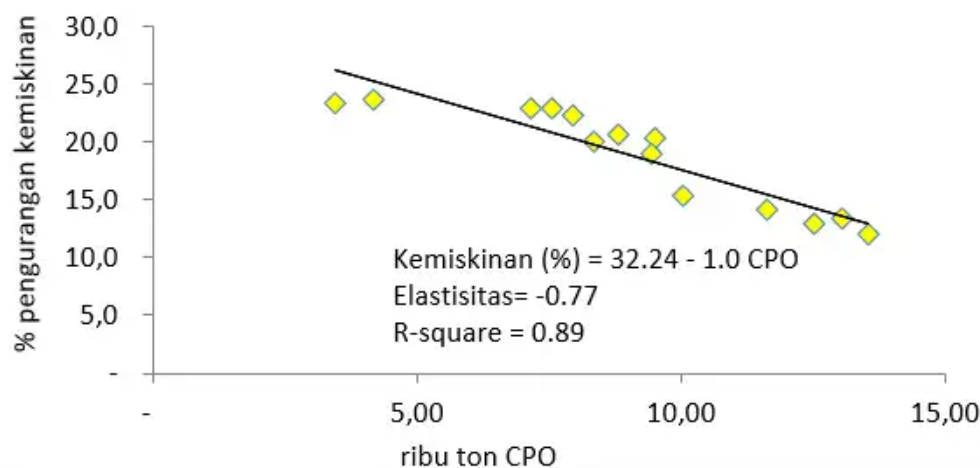


Figure 1. Increased Palm Oil Production Can Reduce Poverty (Source: PASPI, 2014). Oil palm plantation

The figure shows a scatter plot with a regression line illustrating the relationship between two variables: CPO production and the poverty percentage. The X-axis represents thousand tons of CPO, indicating the volume of crude palm oil production in thousands of tons the further right on the axis, the higher the CPO production. The Y-axis represents the poverty percentage; however, the vertical axis value shows the poverty percentage itself, not the reduction percentage — the lower the position on this axis, the lower the poverty percentage,

indicating a reduction in poverty. The data points, shaped like yellow diamonds on the graph, represent observational data, each combining CPO production (X-axis) and the poverty percentage (Y-axis) for a given time period. The straight black line illustrates the relationship between CPO production and the poverty percentage.

Regression equation:  $32.24 - 1.0 \times \text{CPO}$  (the estimated poverty percentage when CPO production is zero) – 1.0  $\times$  CPO (for every 1,000-ton increase in CPO production, the poverty percentage is estimated to decrease by 1 percentage point; the negative sign indicates an inverse relationship — as CPO increases, poverty decreases). Elasticity =  $-0.77$  (meaning a 1% increase in CPO production is estimated to reduce the poverty percentage by 0.77%), indicating that CPO production has a substantial impact on poverty reduction. R-squared = 0.89 indicates that 89% of the variation in the poverty percentage is explained by CPO production. This result shows that the regression model demonstrates a very strong relationship between the two variables.

The oil palm sector has the potential to reduce poverty levels, as evidenced by its significant role in providing employment and market opportunities (Barus and Ernah 2024). However, the benefits are not evenly distributed, resulting in persistent income inequality (Alamsyah et al. 2023). Oil palm plantations, as production centers, increase the income and purchasing power of the rural poor. Smallholder oil palm farmers earn around 5–10 times more than non-oil-palm farmers. Studies on the growth of the oil palm industry — including Susila (2004), Susila and Munadi (2008), World Growth (2011), Gingold (2011), and Santika et al. (2011) — show that palm oil can reduce poverty levels in both rural and urban areas. Indonesia is also one of the world's leading palm oil producers, generating (direct, indirect, and induced) employment for approximately 2.3 million people (PASPI, 2021). However, given that this job creation and income generation represent a total multiplier effect, part of this multiplier benefit is also enjoyed by the poor, both directly and indirectly. Consumption of palm oil also significantly affects poverty, since with a fixed income, the volume of palm oil that can be consumed is greater and at a lower price compared with other oils; this indirectly allows poor households to allocate a relatively smaller portion of their budget to cooking oil, freeing up funds for other needs (World, 2021).

### The Role of Oil Palm Plantations in Supporting Indonesia's SDG Economic Goals

Oil palm farmers in Indonesia fall into a relatively large category and hold the second-largest area of land after private companies, giving oil palm an important role in achieving Indonesia's SDGs. Law No. 39 of 2014 on Plantations shares the same aspects as the SDGs, namely economic, ecological, and socio-cultural functions. The oil palm industry has provided substantial economic benefits, not only to oil palm farmers but also to the broader Indonesian economy.

*Table 2. The Role of the Smallholder Oil Palm Industry in Supporting Indonesia's SDG Economic Goals*

| No. | Target             | Role                                                                                                                                                                                         |
|-----|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | SDG-1: No Poverty  | a. Increase in local income (GAPKI, 2018)<br>b. Able to reduce poverty rates and income inequality at the regency level.                                                                     |
| 2.  | SDG-2: Zero Hunger | a. Reducing hunger in Indonesia through its contribution to gross domestic product.<br>b. Expansion of smallholder oil palm plantation area does not reduce rice farming land (PASPI, 2023). |

| No. | Target                                 | Role                                                                                                                                                                                                                                                                                |
|-----|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                        | c. Produces commodities that can be further processed into food products (Responsible Business Forum, 2018).                                                                                                                                                                        |
| 3.  | SDG-7: Affordable and Clean Energy     | a. The role of oil palm plantations in developing palm biodiesel contributes to the Indonesian economy through export markets (PASPI, 2023).<br>b. Reduces expenditure through energy savings via biomass and methane gas for electricity generation, amounting to 25.7 million GJ. |
| 4.  | SDG-8: Decent Work and Economic Growth | a. Income earned by communities as a result of oil palm plantation expansion creates structural economic change at both the village and urban levels.                                                                                                                               |
| 5.  | SDG-3: Good Health and Well-being      | a. Increases employment opportunities and helps create welfare.<br>b. Palm oil exports generate foreign exchange.                                                                                                                                                                   |

### Contribution of the Palm Oil Industry and National Government Policy

Oil palm plantations have been proven to contribute positively to economic growth, with a combined SDG index of 77.57% achieved by smallholder farmers, exceeding the national average of 70.16% (Sukiyono et al. 2022). Indonesia's oil palm industry is not only about the many benefits it provides but also about the governance of oil palm development, which is considered unsustainable in some respects. Oil palm plantations have negative impacts on communities due to environmental damage and social conflict in various regions. Some of the implications that have occurred include haze disasters, the use of child labor, land conflicts, and low worker welfare. CIFOR/CIRAD states that biodiversity has declined, and this is not limited to monoculture plantations alone. Extensive forest fragmentation has resulted from plantation development; therefore, conservation efforts between large companies and smallholder farmers are essential, as the issue lies not in the crop itself but in where and how it is planted and cultivated. The expansion of oil palm production areas has not been accompanied by increases in farmers' income, with fluctuations in Fresh Fruit Bunch (FFB) prices leading to declines in CPO prices. The 2018–2020 economic crisis, caused by the China–United States trade war and COVID-19, reduced demand for CPO and its derivative products (Jamilah et al., 2016; Jamilah et al., 2020; Mawardati et al., 2021).

As a result, oil palm plantation replanting programs have been hindered by a lack of capital and access to inputs, with financial and market-access constraints limiting the management of independent smallholder plantations compared with plasma farmers. This has fueled accusations that Indonesia lacks good sustainable plantation policies. Indonesia's sustainable development, which integrates economic development (profit/prosperity), social development, and environmental preservation, must proceed in a balanced, harmonious, and inclusive manner. Without these three elements, sustainable development cannot be fully realized. Oil palm development is addressed in Presidential Regulation No. 44 of 2020, which includes two key elements: the implementation of sustainable development in accordance with the constitutional mandate under Law No. 32 of 2009 on Environmental Protection and Management, Article 1(3). According to BPDPKS, Indonesia's efforts to achieve sustainable palm oil are carried out through the implementation of ISPO, RSPO, and the International Sustainability and Carbon Certification (ISCC). Government policies, such as the Indonesian Sustainable Palm

Oil (ISPO) certification, aim to align palm oil production with the SDGs, emphasizing environmental conservation and social responsibility (Hafulyon 2018). The development of the palm oil business is not merely a business matter but represents an early step toward sustainable national development. According to Mawardi et al. (2022), only 3 of 11 companies are committed to ISPO certification, mainly due to a lack of awareness and understanding of the certification process among plantation companies. Large companies are expected to support the implementation of regulations on guidelines for sustainable oil palm plantations in Indonesia.

In efforts to promote sustainable palm oil, the role of NGOs is crucial in raising public awareness. For example, WWF Indonesia has campaigned to encourage the public to purchase responsibly produced palm oil (Hajad and Maulida 2025). Government policy on the rapid development of oil palm is supported by policies that position oil palm plantations as a national priority sector ("Prospects and Challenges," 2016). The government has issued a policy on the use of biofuels (BBN). The Sustainable Development Goals (SDGs) are comprehensive, involving all stakeholders — government, media, NGOs, business, philanthropy, experts, and academics — guided by the principle of "no one left behind" to achieve all SDG targets (Amirya and Irianto 2023). The development of plantation areas has spurred the growth of new towns with educational facilities, sanitation, healthcare facilities, available infrastructure, open access and mobility, growing settlements, and reduced inequality.

In 2025, implementation of the mandatory B40 biodiesel policy is a strategy to promote national energy sovereignty and achieve net-zero emissions, with the government continuing to target biodiesel distribution of up to 16.08 million kiloliters to increase domestic consumption and reduce fossil-fuel imports (Fasya, Praza, and Fariadi 2022). Indonesia can collaborate with global forums such as the Conference of the Parties (COP) to strengthen the position of sustainable palm oil in the global energy transition. Palm oil sustainability represents a major opportunity for Indonesia through appropriate policies, investment in technology, and farmer education to maximize the economic benefits of environmental sustainability. ISPO is expected to help improve, ensure, and enhance the competitiveness of palm oil in the international market. However, by the end of 2023, only about 35% of Indonesia's oil palm plantations held ISPO certification, highlighting the need for intensive efforts toward implementation in order to achieve the net-zero emission target by 2060. Government policies such as ISPO certification aim to align palm oil production with the SDGs, emphasizing environmental conservation and social responsibility (Evalia et al. 2024). At the same time, education and training are needed for smallholder farmers participating in the palm oil industry who face challenges in adopting sustainable practices, including programs on sustainable agronomy, land management, and ISPO certification.

## CONCLUSION

The oil palm industry stands as clear evidence of its role as a driver of the Indonesian economy, particularly in Aceh — palm oil production volume contributes substantially to national Gross Domestic Product (GDP), creates extensive employment opportunities, increases farmers' income by 5–10 times compared with non-oil-palm farmers, and accelerates poverty reduction in oil-palm-producing regions. Data show that every 10% increase in CPO production correlates with a 7.7% decrease in poverty. Oil palm plantations, with their multifunctional agricultural role, support several Sustainable Development Goals (SDGs), including poverty reduction (SDG-1), zero hunger (SDG-2), affordable and clean energy (SDG-7), decent work and economic growth (SDG-8), and good health and well-being (SDG-3). Aceh Province still faces serious poverty

challenges, ranking among the ten provinces with the highest poverty rates in Indonesia. This underscores the need for effective government intervention in managing the oil palm industry to ensure its economic benefits are equitably distributed among the population.

Poverty-alleviation strategies developed include increasing income through access to labor markets and training, improving agricultural productivity, expanding access to financial institutions, reducing expenditure burdens through social assistance, and identifying and addressing pockets of poverty. Nevertheless, the oil palm industry is not without its challenges and negative social and environmental implications. These include land conflicts between local communities and companies, large-scale deforestation threatening biodiversity (such as elephant, tiger, and orangutan populations), and potential climate change resulting from the conversion of forest land into oil palm plantations. Unsustainable agricultural practices, such as the use of pesticides and chemical fertilizers, can cause soil and water pollution. The Indonesian government has demonstrated consistency in pursuing sustainable development within the oil palm industry, in line with Presidential Regulation No. 44 of 2020. Efforts to achieve this sustainability include the implementation of ISPO (Indonesian Sustainable Palm Oil), RSPO, and ISCC certification. Barriers include inadequate knowledge of sustainable practices and the perceived costs associated with certification. The mandatory B40 policy is also being promoted as a strategy to achieve national energy sovereignty and net-zero emission targets. However, the low rate of ISPO certification (around 35% by the end of 2023) indicates the need for intensive implementation efforts, including education and training for smallholder farmers on sustainable agronomic practices and land management. In conclusion, Indonesia's oil palm industry holds transformative potential to advance the economy and reduce poverty; however, achieving inclusive and sustainable development requires all stakeholders to address its negative impacts through comprehensive policies, the implementation of sustainable practices, and capacity building for farmers, in line with the SDG principle of "no one left behind."

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