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Indonesia Palm Oil Industry Outlook Q4 2026

Maintaining Space for Growth Amid a New Equilibrium



October 2026

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OPENING REMARKS

The publication of **Indonesia Palm Oil Industry Outlook Q4 2026** review the developments, challenges, and direction of the national palm oil industry at the end of 2026.

This edition of the Outlook cover the theme "**Maintaining Space for Growth Amid a New Equilibrium.**" The theme reflects a structural change in the Indonesia's palm oil industry. Domestic demand continues to rise, particularly with the strengthening of the biodiesel mandate, while production growth is relatively limited. At the same time, exports retain a strategic position as a source of foreign exchange, a support for the trade balance, and an important part of the palm oil industry ecosystem.

This structural change means that developments in the palm oil industry can no longer be adequately viewed from production, exports, or prices in isolation. The balance between domestic demand, exports, and inventories is increasingly linked to the ability to raise productivity, maintain competitiveness, manage climate risks, preserve market access, and build certainty and quality in industry governance.

On that basis, the Indonesia Palm Oil Industry Outlook Q4 2026 has been prepared using an integrated approach. The analysis covers developments in national palm oil supply–demand and stocks, climate risks to production, developments in CPO prices and trade instruments, the contribution of palm oil to the economy and energy security, the role of the Oil Palm Replanting Program for Smallholders in strengthening production capacity, and a number of policy developments that may influence the direction of the industry entering 2027.

The Outlook draws on historical data, projections, modelling, and a review of market, policy, and regulatory developments. This approach is expected not only to provide an overview of the industry's condition at the end of 2026, but also to help in

understanding the linkages among these changes and their implications for the industry's ability to sustain growth going forward.

From this perspective, "space for growth" should not be viewed as the expansion of plantation area, but as the industry's ability to keep increasing its capacity and the value it generates. The space for growth is built mainly through higher productivity, the strengthening of smallholder plantations, the creation of domestic value added, the preservation of space for exports, greater efficiency, and stronger governance capable of safeguarding market access and business certainty. This perspective is the common thread running through the entire Q4 2026 Outlook.

We recognize that the projections and analyses in this Outlook remain subject to a dynamic environment. Changes in market conditions, energy prices, climate, global trade, or policy may alter some of the assumptions used. This Outlook is therefore intended as a framework to review the direction of change, risks, and strategic choices, not merely as a projections.

We expect the Indonesia Palm Oil Industry Outlook Q4 2026 will beneficial as a reference for the government, business actors, smallholders, academics, and other stakeholders in understanding developments in the palm oil industry and preparing for 2027.

To conclude, we would like to thank all stakeholder that provided data, information, input, and support in the preparation of this Outlook. We hope this publication contributes to the development of an Indonesian palm oil industry that is increasingly productive and competitive, and able to maintain its space for growth amid a constantly shifting equilibrium.

IPOSS Executive Board

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CHAPTER 1. INTRODUCTION

1.1 Background

Indonesia's palm oil industry is entering the end of 2026 in a configuration that differs from that of the past several years. This change is reflected not only in movements in production, prices, or exports, but also in the growing number of functions the palm oil industry must fulfill simultaneously. Palm oil remains an important source of export earnings and trade surplus, yet at the same time its domestic role is expanding as a feedstock for food, oleochemicals, and energy through the strengthening of the biodiesel mandate.

The most visible change is in the structure of national palm oil use. In 2026, palm oil production is projected to reach approximately **52.4 million MT**, while domestic consumption is projected to rise to approximately **27.1 million MT**. For the first time in the Outlook's observation period, domestic use is projected to account for approximately **51.3%** of total national palm oil use, surpassing the export share of **48.7%**. This shift indicates that the domestic market has become one of the key determinants of the balance of Indonesia's palm oil industry.

The implementation of the B50 biodiesel mandate expands the role of palm oil in supporting energy security and substituting fossil fuel imports. However, this change also has consequences for the supply balance. Domestic consumption is growing faster than production, while exports remain necessary to generate foreign exchange, maintain Indonesia's position in the global market, and serve as one of the revenue bases supporting various palm oil industry development programs.

Under these conditions, exports and stocks increasingly provide space for adjustment when supply growth does not keep pace with growth in domestic demand. This means that the industry's challenge no longer lies only in how to allocate production between the domestic and export markets, but is increasingly shifting toward how

to expand supply capacity so that rising domestic demand can be met without continually narrowing the space for exports and stocks.

This issue is becoming more complex because the ability to increase supply is not entirely within the market's control. Palm oil production is influenced by the biological cycle of the crop and by agro-climatic conditions, so climate change and water stress can affect production both in the short term and through lagged responses in subsequent periods. At the same time, land expansion is increasingly limited, so future production growth must increasingly rely on higher productivity, replanting, improved cultivation practices, and increased productivity of smallholder plantations.

Changes in the supply–demand balance also interact with price formation and trade policy. Global and domestic CPO prices are influenced by various market fundamentals, while the Reference Price, Export Levy, and Export Duty in turn influence trade incentives and the economic value received along the industry chain. At the same time, part of the revenue from exports is in turn linked to the financing of various palm oil programs, including support for the biodiesel program. Thus, a change in one part of the system can have consequences for the others.

Entering 2027, the industry's challenges are also increasingly shaped by changes in the policy and governance environment. The implementation of the EUDR raises the requirements for supply chain traceability and the ability to prove the origin of commodities down to the plantation of origin. The development of the Strategic Minerals and Commodities Exchange (*Bursa Mineral dan Komoditas Strategis*, BMKS) and the national commodity trading system bring an agenda of strengthening the transparency and credibility of price formation. Meanwhile, the dynamics of land policy and agrarian reform make the certainty of the Land Use Rights (Hak Guna Usaha, HGU) an important part of sustaining investment and the production base.

These three developments show that the industry's ability to grow in the future is not determined solely by its ability to produce more CPO.

Market access, data quality and interoperability, the credibility of trading mechanisms, business certainty, and the sustainability of the production base are all part of the industry's room for growth itself.

It is in this context that the Indonesia Palm Oil Industry Outlook Q4 2026 adopts the theme "**Maintaining Room for Growth amid a New Equilibrium.**" The new equilibrium describes a structural change in which the domestic market absorbs an increasingly large share of production, while exports, stocks, energy security, and global competitiveness must still be maintained. Room for growth, meanwhile, describes the need to create additional capacity (whether through productivity, efficiency, the strengthening of smallholder oil palm, or governance and policy) so that the growth of one industry function does not reduce the capacity of the others.

Thus, the main issue raised in this Outlook is not merely how large production, consumption, exports, or CPO prices will be at the end of 2026. The more fundamental question is how Indonesia's palm oil industry can maintain its room for growth when a growing number of interests depend on the same palm oil supply.

1.2 Objectives of the Q4 2026 Outlook

Indonesia Palm Oil Industry Outlook for Q4 2026 was prepared to provide an integrated overview of the palm oil industry’s development toward the end of 2026, while also identifying the factors that will influence the industry’s direction heading into 2027. The analysis focuses not only on projections of market indicators but also on the interrelationships among production, domestic consumption, exports, inventory, climate, prices, trade instruments, energy security, supply capacity, and changes in the policy environment.

Specifically, the Q4 2026 Outlook aims:

1. Evaluate developments in and projections of the national palm oil supply–demand balance through the end of 2026, covering production, domestic consumption, exports, and stocks;

2. Identify climate risks to production activities in Q4 2026 and their biological implications for production formation in subsequent periods;
3. Project developments in global and domestic CPO prices and their implications for the Reference Price, Export Levy, and Export Duty;
4. Evaluate the changing economic role of palm oil through its contribution to trade, the strengthening of energy security through B50, and the interaction between domestic demand, room for exports, and program financing;
5. Assess the contribution and potential of the oil palm replanting program for smallholders (*Peremajaan Sawit Rakyat*, PSR) as one source of increased production capacity through higher productivity without relying on land expansion; and
6. Identify strategic developments related to market access, trade infrastructure, and the certainty of the production base that may affect the competitiveness and sustainability of the palm oil industry entering 2027.

With these objectives, this Outlook is expected not only to provide an overview of what happened in the palm oil industry throughout 2026, but also to explain the linkages among these changes and their implications for the industry's ability to maintain a balance between domestic demand, exports, and future growth.

1.3 Structure and Integration of the Analysis

The Q4 2026 Outlook is structured as a series of interconnected analyses. The discussion begins with the industry's physical fundamentals, then moves on to risks to production capacity, price formation and trade instruments, changes in the economic function of palm oil, the need to increase supply capacity, and finally the policy and governance environment that determines the industry's ability to maintain its room for growth.

Chapter 2 discusses the national palm oil supply–demand through Q4 2026, covering production, domestic consumption, exports, the use balance, and stocks. This chapter serves as the starting point for

understanding the change in the structure of palm oil use when domestic demand rises faster than production and exports become one of the areas of adjustment.

Chapter 3 discusses the climate outlook and its impact on production through an analysis of climate hazard, spatial exposure, and their implications for production and mitigation needs. This analysis positions climate as one of the factors affecting the industry's ability to maintain supply, both through operational disruptions in the short term and through the crop's biological responses, which may emerge with a time lag.

Chapter 4 discusses the outlook for global and domestic CPO prices. The price analysis is placed after the discussion of supply fundamentals and climate risks so that price projections can be read in the context of changes in supply availability, domestic consumption, exports, stocks, and developments in the global vegetable oil market.

Chapter 5 discusses the outlook for the Reference Price, Export Levy, and Export Duty. The analysis does not stop at the level of the tariffs, but examines how these instruments affect the export netback, incentives for downstreaming, and the economic balance between export interests, the domestic market, and the financing of palm oil industry development.

Chapter 6 extends the discussion from market balance to the economic contribution of palm oil. The analysis covers palm oil's contribution to the trade balance, changes in the room for exports due to B50, the creation of domestic economic value, the outlook for the biodiesel program in Q4 2026, and the challenges of its implementation. This chapter shows that the economic role of palm oil is evolving from a foreign exchange-earning commodity into one that also has a strategic function in national energy security.

Chapter 7 places the oil palm replanting program for smallholders (PSR) in the context of the need to increase supply capacity. The analysis discusses the progress of the PSR, the contribution of

replanted palms to current production, the potential for additional production as the palms mature, and the need to accelerate the PSR as one pathway to increasing the productivity of smallholder plantations. With the room for expansion increasingly limited, raising productivity on existing land becomes increasingly important for meeting domestic demand while maintaining the room for exports.

Chapter 8 discusses industry and policy perspectives that may affect the industry's ability to maintain its room for growth entering 2027. The discussion focuses on three strategic issues: readiness for the EUDR as part of efforts to maintain market access and supply chain traceability; the development of the BMKS and the trading system as part of strengthening transparency and price formation; and the dynamics of HGU and agrarian reform as they relate to business certainty and the sustainability of the production base.

Together, these chapters form a single interrelated line of analysis: the supply–demand balance indicates the degree of tightness in the industry; climate affects the ability to maintain supply; market fundamentals interact with price formation; prices in turn affect trade instruments and incentives; rising domestic use changes the economic function of palm oil and the room for exports; supply constraints raise the importance of productivity and the PSR; while market access, trade infrastructure, and the certainty of the production base determine the industry's ability to maintain its room for growth.

1.4 Overview of the Q4 2026 Outlook

The Q4 2026 Outlook adopts the title "**Maintaining Room for Growth amid a New Equilibrium**" to establish the overarching framework for understanding developments in Indonesia's palm oil industry in the final quarter of 2026.

This new equilibrium takes shape as domestic use takes an increasingly large share of the structure of national palm oil use, while production growth is relatively limited and the industry still needs to maintain exports, stocks, and global competitiveness.

Within this framework, there are three interrelated dimensions**. The first is the supply balance**, which refers to the ability of production to simultaneously meet the needs of food, energy, oleochemicals, exports, and stock buildup. When production grows more slowly than domestic demand, exports and stocks become increasingly sensitive to changes in supply.

The second is the balance of economic value, which reflects how palm oil continues to generate foreign exchange and support the trade balance while also creating economic value domestically through downstreaming, energy import substitution, and domestic economic activity. In this dimension, exports and the domestic market are not positioned as two mutually exclusive interests, but as economic functions that need to be kept in balance.

The third is the sustainability of room for growth, which refers to the industry's ability to create additional capacity and maintain competitiveness when land expansion is increasingly limited and the business environment is increasingly complex. Additional production increasingly needs to come from productivity, replanting, efficiency, and the strengthening of smallholder plantations. At the same time, this growth needs to be supported by market access, supply chain traceability, credible trading mechanisms, and certainty over the production base.

For this reason, **room for growth in this Outlook is not understood merely as land expansion**. Room for growth encompasses the ability to increase productivity and supply capacity, maintain the room for exports, create domestic value added, build adequate inventories, strengthen smallholder oil palm, and develop governance that safeguards market access and business certainty.

This perspective also changes the way growth in the palm oil industry is viewed. Growth cannot be adequately measured by increases in production or consumption in isolation, but by the industry's ability to increase its capacity **without sacrificing its other economic functions**. Greater use of CPO for energy, for example, will deliver

stronger strategic value if it can proceed alongside the safeguarding of food needs, the room for exports, stocks, state revenue, and global competitiveness.

Thus, the main challenge for Indonesia's palm oil industry entering 2027 is not merely determining how the available supply is allocated, but **how to expand room for growth when a growing number of interests depend on the same supply**. The ability to meet this challenge will largely determine whether the new equilibrium formed in 2026 can become a foundation for stronger growth, or instead develop into a new constraint for Indonesia's palm oil industry.



CHAPTER 2. SUPPLY–DEMAND OUTLOOK FOR Q4 2026

Palm oil supply–demand dynamics in Q4 2026 reflect the interaction between production capacity, domestic demand, exports, and the changes in stocks expected to occur during the last three months of 2026. The discussion begins with developments in production as the main source of supply, followed by domestic consumption, exports, and their implications for the national palm oil balance and stocks. These dynamics are important because they are closely linked to palm oil price formation in both the domestic and global markets, particularly as the policies of Indonesia, the world's largest palm oil producer, increasingly influence the supply–demand balance in the market.

2.1 Production Outlook for Q4 2026

2.1.1 National Cumulative Production through Q4 2026

Indonesia's palm oil production in 2026 is projected to reach approximately 52.4 million MT, consisting of 47.3 million MT of crude palm oil (CPO) and 5.1 million MT of palm kernel oil (PKO). Compared with 51.5 million MT in 2025, production increases by approximately 0.9 million MT, or 1.86%.

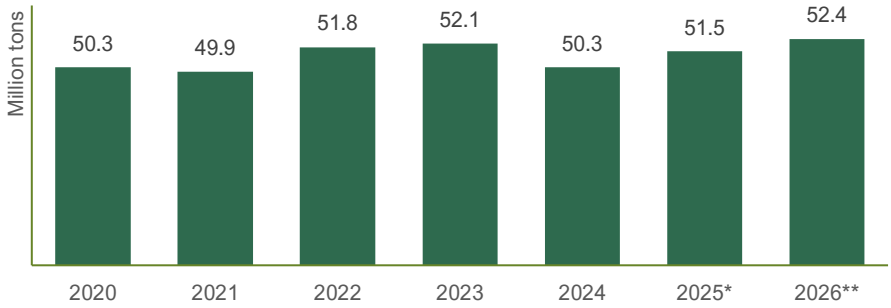


Figure 1. National Cumulative Production through Q4 2026
Sources: Statistics Indonesia (2025b),
Directorate General of Plantations (2025), analysed by IPOSS
*) Estimated data **) Forecast Data

Historically, 2026 production is the highest in the 2020–2026 period. Nevertheless, the increase remains relatively limited. Production in 2026 is only about 0.3 million MT higher than the 52.1 million MT recorded in 2023. This indicates that the increase in production in 2026 has not been as large as previously expected.

Initially, crop conditions provided room for a larger increase in production in 2026. Rainfall and water availability in the 2024–2025 period were relatively supportive of the formation of crop production potential to be realized in 2026. Taking into account the time lag between crop growth conditions, flower and fruit formation, and the actual harvest, 2026 production under normal conditions should have had the opportunity to rise more strongly than in the previous year.

However, this potential was not fully realized. Throughout 2026, there were a number of disruptions that directly or indirectly affected national production capacity. Flooding in several parts of Sumatra early in the year affected some plantation areas and disrupted harvesting and plantation operations. In the following period, forest and land fires in a number of regions also put pressure on some production areas and plantation activities.

The dynamics of plantation management are also a factor that needs to be taken into account. During this period, there were changes in the control and management of a number of areas, both through the acquisition of plantations by other companies and through land enforcement, takeover, and seizure processes. On some plantations, these changes in management created a transition period that may affect the intensity of upkeep, harvesting, crop transport, and production recording. Thus, areas that are physically still oil palm plantations may not necessarily be able to maintain the same level of productivity while the management transition is under way.

On the other hand, the additional production expected from the oil palm replanting program for smallholders (PSR) has also not yet made a significant contribution to national production. Some of the PSR areas replanted in the 2022–2023 period began entering the mature

phase in 2026. However, because the PSR area realized in that period was still relatively limited compared with the national oil palm plantation area, the additional production from replanted palms has not been large enough to drive a significant increase in national production. Moreover, palms that have just entered the mature phase are still at an early stage of productivity growth and have not yet reached their peak production potential.

These conditions reveal the two sides of the replanting process. On the one hand, the old palms being replanted temporarily leave the national production base. On the other hand, the PSR areas from previous years that are beginning to produce again are not yet extensive enough and have not yet reached optimal productivity to deliver a large increase in production. Therefore, as of 2026, the PSR has not yet become a source of production growth strong enough to offset the various pressures on existing areas.

Taking these developments into account, palm oil production in 2026 is still expected to increase compared with the previous year, but the increase is not as large as the potential previously projected in the 2026 Outlook. The production projection of 52.4 million MT reflects continued improvement in productivity and crop production potential, but part of this additional production is held back by disruptions in production areas, plantation management transitions, and the still limited contribution of replanted palms to national production.

2.1.2 Year-on-Year Production Trends for Q4

After declining in Q3 2026, national palm oil production is projected to rise again in Q4 2026. Total production in the October–December 2026 period is estimated to reach approximately 13.3 million MT, an increase of approximately 1.8 million MT, or 15.6%, compared with approximately 11.5 million MT in Q3 2026. This increase mainly reflects a shift in production toward the end of the year after production was at a relatively low level in the previous quarter.

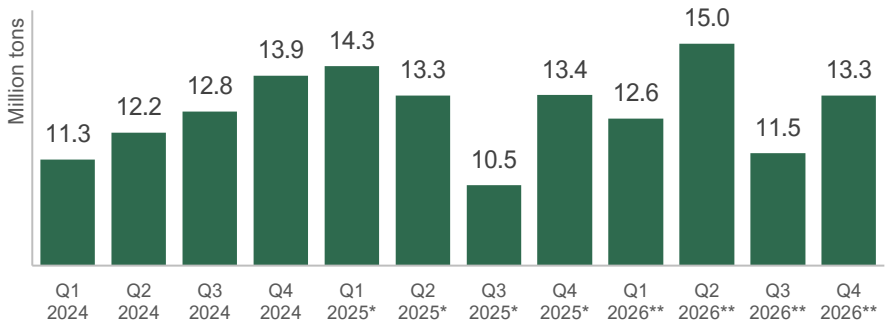


Figure 2. Quarterly Trends in National Palm Oil Production, Q1 2024 to Q4 2026
Sources: Statistics Indonesia (2025b),
Directorate General of Plantations (2025), analysed by IPOSS
*) Estimated data **) Forecast data

Production movements throughout 2026 show a fairly volatile distribution of production across quarters. Production reached approximately 12.6 million MT in Q1 and rose to 15.0 million MT in Q2, before falling to 11.5 million MT in Q3 and then rising again to 13.3 million MT in Q4. The increase in Q4 production does not necessarily indicate an increase in production capacity, but rather reflects a shift of part of the realized production from Q3 to Q4, mainly because fruit formation and ripening took longer than the normal pattern.

This becomes clearer when Q4 2026 production is compared with the same period in previous years. Although up approximately 15.6% from Q3 2026, Q4 production of 13.3 million MT is roughly the same as the 13.4 million MT recorded in Q4 2025, slightly lower than the 13.9 million MT in Q4 2024, and still about 16% below the 15.9 million MT reached in Q4 2022. Thus, the increase in production from Q3 to Q4 is more accurately read as a change in the timing of production within the current year, while on a year-on-year basis no significant increase in production is yet apparent. This shift is related, among other things, to changes in agro-climatic conditions that affect the timing of fruit formation and ripening. The comparison of Q4 production across years is presented in Figure 3.

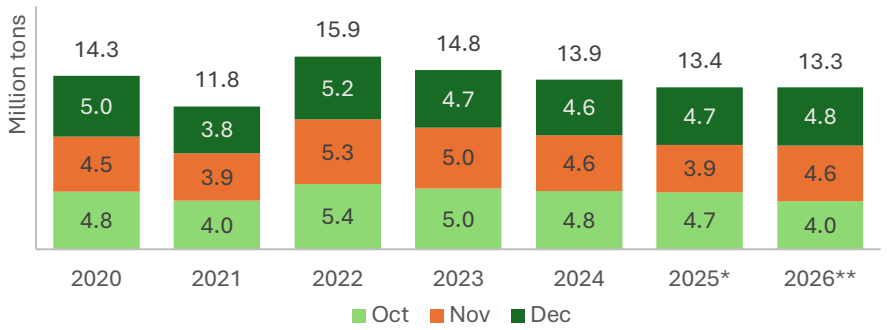


Figure 3. National Production, Q4 YoY
Sources: Statistics Indonesia (2025b),
Directorate General of Plantations (2025), analysed by IPOSS
*) Estimated data **) Forecast data

This comparison shows that the increase in production in Q4 2026 is more accurately understood as a shift in the distribution of production across quarters, rather than as a structural increase in production capacity. Part of the production that was not fully realized in Q3 is expected to shift to Q4, so that Q4 production rises compared with the previous quarter. This also explains why the quarter-to-quarter increase in Q4 production is fairly high, while on a year-on-year basis production is relatively unchanged from the same period of the previous year.

This shift in the distribution of production is related to the dynamics of oil palm fruit formation and ripening. Under normal conditions, fruit development from pollination to ripeness takes about 5–6 months. However, unfavorable environmental conditions can slow fruit filling and ripening, so that the fruit development period becomes longer. As a result, part of the production previously expected to be harvested in Q3 is only realized in the following period.

On a monthly basis, this shift is visible in the distribution of Q4 2026 production. October production is projected to remain relatively low, at approximately 4.0 million MT, then rise to approximately 4.6 million MT in November and 4.8 million MT in December. Compared with the previous year, November 2026 production is projected to be about 17.9% higher than the 3.9 million MT recorded in November 2025,

while December 2026 production is roughly the same as in the same period of the previous year. This pattern indicates that part of the additional Q4 production is concentrated in November and December.

Rainfall conditions in Q4 are expected to be more supportive of the crop's physiological processes and fruit ripening. Although the influence of El Niño is still present, this does not necessarily mean an absence of rain. Its influence is related more to a tendency toward lower rainfall than under normal conditions. Thus, if rainfall in Q4 improves compared with the previous period, more adequate water availability is expected to support the crop's physiological activity, including photosynthesis, fruit filling, and bunch ripening.

Nevertheless, the increase in production in Q4 cannot be viewed entirely as new additional production. Part of it is realized production shifted from the previous period. This is consistent with total Q4 2026 production, which is projected at approximately 13.3 million MT, roughly the same as the 13.4 million MT in Q4 2025 and still lower than several previous historical Q4 levels.

Thus, Q4 2026 production dynamics indicate a redistribution of harvest timing from Q3 to Q4, especially to November and December, while overall production capacity has not yet shown a significant increase. This shift is one of the factors enabling annual production in 2026 to still increase compared with 2025, although the increase remains lower than the potential previously expected.

2.2 Consumption Outlook for Q4 2026

Indonesia's domestic palm oil consumption in 2026 is projected to reach approximately 27.1 million MT, up from 25.2 million MT in 2025. Domestic consumption thus increases by approximately 1.9 million MT, or 7.4%, far higher than production growth over the same period.

The increase in domestic consumption comes mainly from the use of palm oil for biodiesel. Biodiesel consumption is projected to rise from approximately 13.6 million MT in 2025 to 15.3 million MT in 2026, an

increase of approximately 1.7 million MT. Thus, nearly 90% of the additional domestic consumption in 2026 comes from higher biodiesel demand.

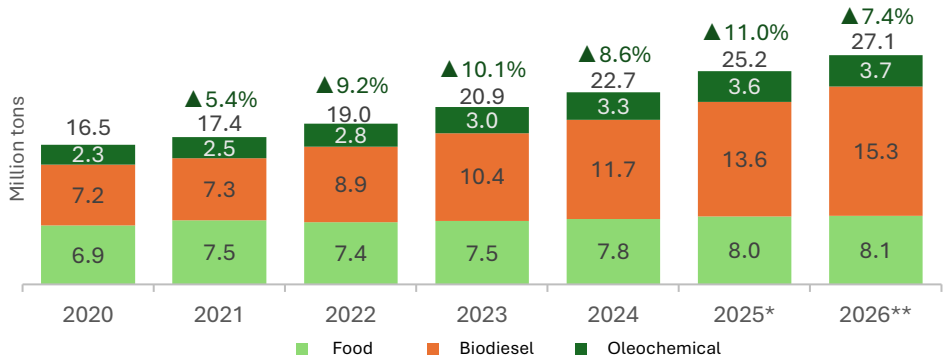


Figure 4. Annual Projections for National Palm Oil Consumption through 2026
Sources: Statistics Indonesia (2025a),
Directorate General of Plantations (2025), analysed by IPOSS
*) Estimated data **) Forecast data

Based on Figure 4, consumption for food and oleochemicals shows relatively limited growth. Food consumption rises from approximately 8.0 million MT to 8.1 million MT, while oleochemical consumption rises from approximately 3.6 million MT to 3.7 million MT.

This change indicates that growth in Indonesia's domestic palm oil consumption is increasingly determined by energy policy. The implementation of the B50 mandate, effective July 1, 2026, raises biodiesel demand and changes the structure of domestic palm oil use. Although the policy still provides a transition period for the distribution of biodiesel inventories for B40 blending until September 30, 2026, this provision relates mainly to the distribution process during the transition period. **It does not necessarily mean that demand for CPO as a feedstock for biodiesel production in Q3 2026 remains at the B40 level**. In this projection, the increase in CPO demand for biodiesel production has therefore been taken into account since Q3 2026.

On a quarterly basis, this change begins to appear in the second half of 2026. Domestic consumption is projected to reach approximately

6.5 million MT in Q1, then 6.3 million MT in Q2. In line with the entry into force of B50, consumption rises to approximately 7.2 million MT in Q3 and remains at roughly the same level in Q4, at 7.23 million MT.

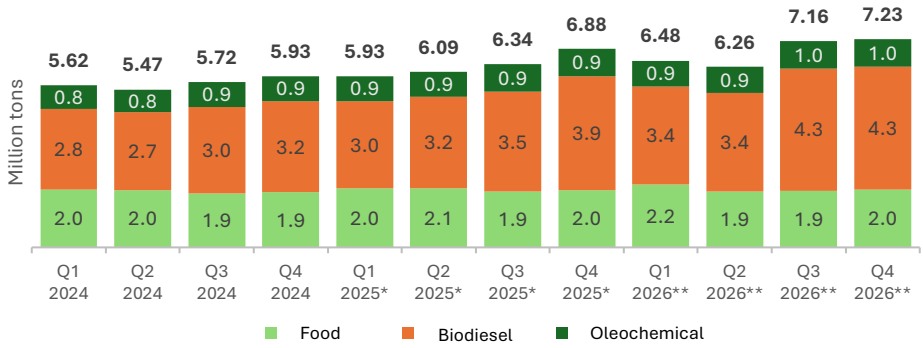


Figure 5. Quarterly Projections of National Palm Oil Consumption Through 2026
Sources: Statistics Indonesia (2025a),
Directorate General of Plantations (2025), analysed by IPOSS
*) Estimated data **) Forecast data

The largest increase occurs in biodiesel consumption. After standing at around 3.4 million MT in Q1 and Q2, biodiesel consumption rises to approximately 4.3 million MT in Q3 and remains at the same level in Q4. Thus, the change in consumption structure resulting from the implementation of B50 has been reflected since Q3 and continues throughout Q4 2026.

In Q4 2026, biodiesel is projected to absorb about 59% of domestic consumption, with food at about 28% and oleochemicals at about 13%. This structure shows the growing dominance of palm oil use for the energy sector relative to other domestic uses.

From a supply–demand perspective, the increase in domestic consumption is one of the most important changes in 2026. While production rises by only about 0.9 million MT compared with the previous year, domestic consumption increases by about 1.9 million MT. This means that the additional domestic consumption is larger than the additional production available.

In Q4 2026, domestic consumption of 7.23 million MT is equivalent to about 54% of quarterly production, which is projected to reach 13.3 million MT. This narrows the supply available for exports and stock buildup.

Thus, the implementation of B50 not only increases domestic palm oil demand, but also changes the balance of national production allocation. This change will become increasingly important entering 2027, when B50 will be in effect for a full year.

2.3 Export Outlook for Q4 2026

Amid domestic consumption rising faster than production growth, exports are one of the main components undergoing adjustment. Indonesia's total exports of palm oil products in 2026 are projected to reach approximately 25.76 million MT, down by approximately 4.70 million MT, or 15.4%, from 30.46 million MT in 2025.

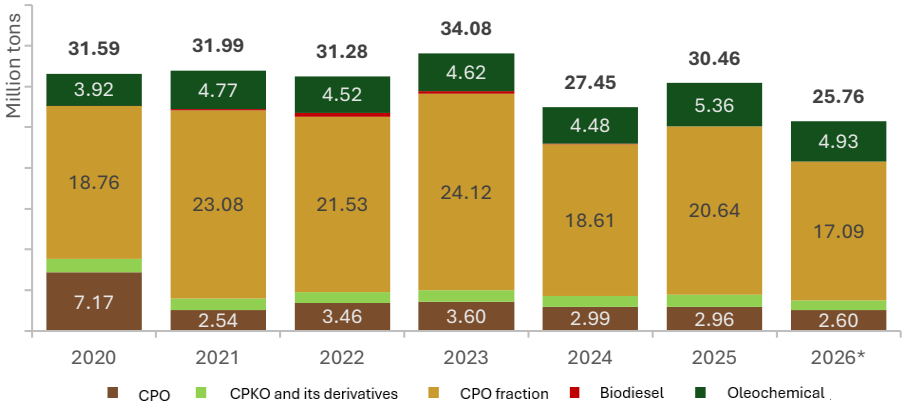


Figure 6. Annual National Palm Oil Exports Through 2026
Sources: Statistics Indonesia (2026b), analysed by IPOSS
*) Estimated data

Export volume in 2026 is the lowest in the 2020–2026 period and about 24% lower than the export peak of 34.08 million MT in 2023. This decline indicates a fairly substantial change in the allocation of national palm oil use.

The decline in exports occurs mainly in the CPO fractions group, which is the largest component in the structure of Indonesia's palm oil exports. Exports of CPO fractions are projected to fall from approximately 20.64 million MT in 2025 to 17.09 million MT in 2026, a decrease of approximately 3.55 million MT. CPO exports also fall from approximately 2.96 million MT to 2.60 million MT, while oleochemical exports fall from 5.36 million MT to approximately 4.93 million MT.

Despite the decline, CPO fractions remain the largest component in the export structure, with a share of about 66% of total exports of palm oil products. This shows that the decline in exports occurs not only in CPO as a raw material, but also in the processed products that have long been the main component of Indonesia's palm oil exports.

On a quarterly basis, the decline in exports becomes more pronounced in the second half of 2026. Exports still reached approximately 7.8 million MT in Q1 and then fell to 7.2 million MT in Q2. In Q3, exports fell further to approximately 5.9 million MT and are projected to reach only 4.9 million MT in Q4 2026.

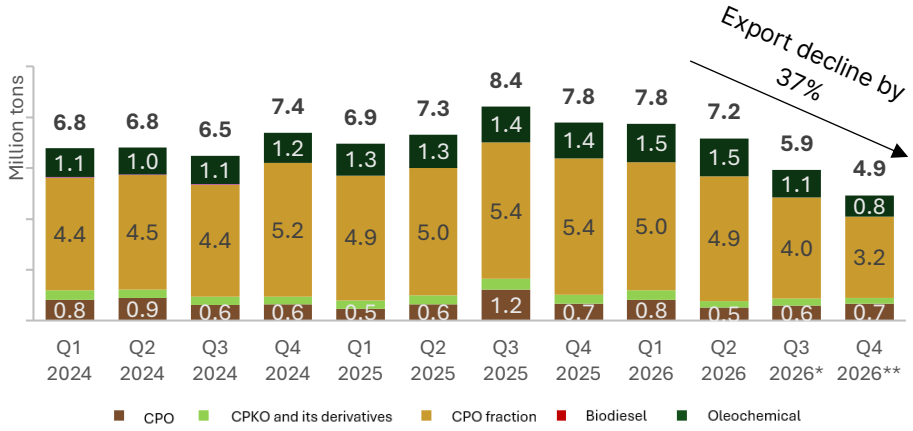


Figure 7. Quarterly National Palm Oil Exports through Q4 2026
Sources: Statistics Indonesia (2026b), analysed by IPOSS
*) Estimated data **) Forecast data

Compared with Q3 2026, Q4 exports fall by about 16.9%. Compared with approximately 7.8 million MT in Q4 2025, the decline reaches about 37.2%. Thus, pressure on exports intensifies after the implementation of B50 in the second half of 2026.

The decline in Q4 comes mainly from exports of CPO fractions, which fall from approximately 4.0 million MT in Q3 to 3.2 million MT in Q4. Oleochemical exports also fall from approximately 1.1 million MT to 0.8 million MT. Meanwhile, CPO exports rise slightly from approximately 0.6 million MT to 0.7 million MT, but this increase is not enough to offset the decline in the other product groups.

These developments show that exports increasingly serve as an adjustment variable in the national palm oil balance. When domestic consumption rises while production growth is relatively limited, part of the supply previously available for the export market needs to be allocated to meet domestic needs.

Nevertheless, changes in export volume are not determined entirely by the availability of domestic supply. Demand from destination countries, the price of palm oil relative to other vegetable oils, and global trade conditions continue to affect actual exports. The decline in exports therefore needs to be seen as the result of the interaction between increasingly limited domestic supply and demand developments in the international market.

Overall, the Q4 2026 export outlook shows an increasingly evident change in the structure of Indonesia's palm oil use. The domestic market absorbs a growing share of production, while exports become the component that adjusts to maintain the supply balance.

2.4 Balance and Ending Stocks Outlook for Q4 2026

2.4.1 National Palm Oil Balance for 2026

Changes in production, domestic consumption, and exports throughout 2026 shape a palm oil balance structure that differs from previous years. National palm oil production is projected to reach approximately 52.4 million MT, while the domestic allocation reaches 27.1 million MT and exports approximately 25.76 million MT.

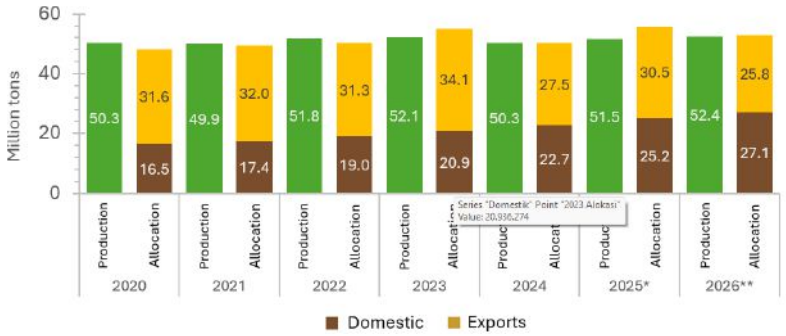


Figure 8. A Comparison of Palm Oil Production, Domestic Allocation, and Exports
Sources: Statistics Indonesia (2025a, 2026b), Directorate General of Plantations (2025), IPOSS (2026a), analysed by IPOSS
*) Estimated data **) Forecast data

Compared with the previous year, the largest change occurs in the structure of palm oil use. The domestic allocation increases by approximately 1.9 million MT, while exports fall by approximately 4.7 million MT. Thus, the increase in domestic demand is met not entirely by additional production, but also by reallocating supply previously available for the export market.

This change brings the structure of Indonesia's palm oil use to an important turning point. In 2025, domestic consumption accounted for about 45.3% of total palm oil use, while exports accounted for 54.7%. In 2026, this composition reverses to 51.3% for domestic consumption and 48.7% for exports.

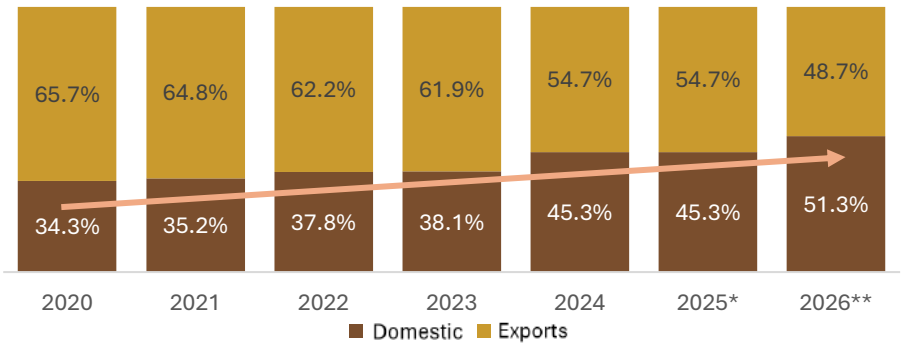


Figure 9. Share of Domestic Consumption and Exports in the Total Palm Oil Allocation
Sources: Statistics Indonesia (2025a, 2026b), IPOSS (2026a), analysed by IPOSS
*) Estimated data **) Forecast data

With this composition, for the first time in the observation period, the volume of palm oil used domestically exceeds the volume exported. This shift is one of the most important changes in the structure of Indonesia's palm oil supply–demand in 2026. It should be emphasized that this ratio describes the composition between domestic consumption and exports as destinations of use, not the percentage of production consumed domestically.

This structural change occurs through two simultaneous processes. First, domestic consumption rises, driven mainly by higher biodiesel demand following the implementation of B50. Second, exports contract substantially. Thus, the increase in the domestic share to the point of exceeding exports does not merely reflect an expansion of the domestic market, but also indicates the increasingly limited volume allocated to the export market.

From a balance perspective, this shows that exports are the component that adjusts the most when domestic consumption grows faster than production. As long as there is still room to reduce exports, the domestic physical balance can be maintained. However, the consequence is an ever narrower margin between domestic demand, exports, and inventories if production does not grow faster in subsequent periods.

The annual balance also does not capture the supply pressures that occur within the year. Production, consumption, and exports are not evenly distributed from month to month, while the stock position in any given period is the accumulation of the balances of previous periods. Therefore, although the 2026 annual balance appears more balanced than that of 2025, inventory levels in several periods during the year remain low.

To see when supply pressures occur and how adjustments in production, consumption, and exports affect inventories, monthly stock developments throughout 2026 need to be analyzed in more detail in the next section.

2.4.2 Ending Stocks for Q4 2026

Stock movements throughout 2026 show that the national palm oil supply balance is not even from month to month. Although on an annual basis the gap between production and total use is relatively small, in some periods supply deficits cause stocks to fall to very low levels, while in other periods production surpluses allow inventories to be rebuilt.

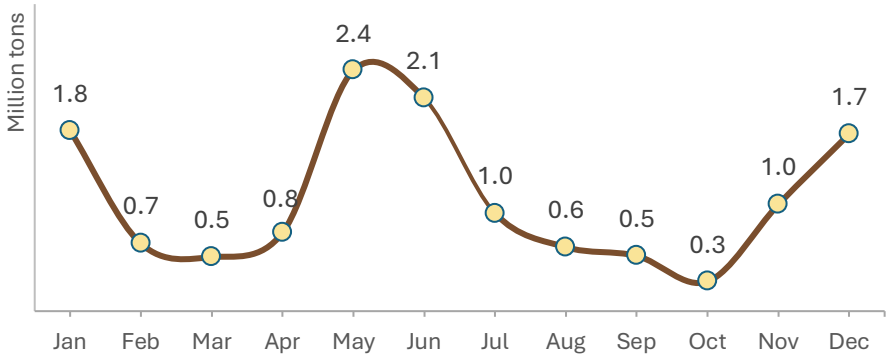


Figure 10. Palm Oil Ending Stocks in 2026
Sources: Statistics Indonesia (2025a, 2026b), Directorate General of Plantations (2025), analysed by IPOSS

At the beginning of the year, palm oil stocks stood at around 1.8 million MT in January 2026, then fell to approximately 0.7 million MT in February and 0.5 million MT in March. The stock position then rose to approximately 0.8 million MT in April and reached approximately 2.4 million MT in May, before declining slightly to 2.1 million MT in June.

Entering the second half of the year, pressure on inventories increased again. Stocks fell to approximately 1.0 million MT in July, 0.6 million MT in August, and 0.5 million MT in September. This decline was in line with low production in Q3, while domestic consumption rose after the implementation of B50. Part of the demand in that period therefore had to be met by drawing down inventories.

Pressure on stocks continues into early Q4. In October 2026, stocks are projected to reach their lowest point at approximately 0.3 million MT. This position shows that although the annual balance appears relatively balanced, in certain periods the available supply is very limited.

However, entering November and December, the stock position begins to rise to approximately 1.0 million MT in November and 1.7 million MT in December 2026. The increase in stocks at the end of the year occurs mainly because the distribution of production shifts to the latter part of Q4, while exports fall and domestic consumption is relatively stable.

Viewed on the basis of the quarterly balance, the pattern of stock changes becomes clearer. In Q1 2026, production was lower than domestic consumption and exports combined, resulting in a supply flow deficit of approximately 1.7 million MT. The situation reversed in Q2, when higher production generated a surplus of approximately 1.5 million MT. In Q3, the balance returned to a deficit of approximately 1.6 million MT, so stocks were drawn down again.

In Q4, production is projected to reach approximately 13.3 million MT, while domestic consumption is approximately 7.2 million MT and exports approximately 4.9 million MT. There is thus a supply flow surplus of approximately 1.2 million MT. It is this surplus that allows stocks to rise from approximately 0.5 million MT at the end of September to approximately 1.7 million MT at the end of December.

However, the rebuilding of stocks in Q4 needs to be read together with production and export dynamics. The additional supply in Q4 is partly a shift in the distribution of production from Q3, not a structural increase in production capacity. At the same time, Q4 exports fall to approximately 4.9 million MT, far lower than the approximately 7.8 million MT in Q4 2025. Thus, the recovery in stocks at the end of the year is supported not only by higher Q4 production, but also by the smaller volume leaving through exports.

This shows that stocks function as the main buffer against timing mismatches between production and use. When production falls while domestic consumption and exports remain high, stocks are drawn down. Conversely, when production rises and/or exports decline, part of the supply can rebuild inventories. The stock position is therefore an important indicator for reading the degree of tightness in the balance, which is not always visible in the annual aggregates.

Although year-end stocks are projected to return to approximately 1.7 million MT, this position is still lower than the beginning-of-year stocks of 2.2 million MT. This means that throughout 2026 Indonesia still uses approximately 0.5 million MT of inventories to cover the gap between production and total use.

This relatively low stock position is an important concern entering 2027. The implementation of B50 for a full year will keep domestic palm oil demand at a high level. If the increase in production remains limited, the room to meet domestic demand, maintain exports, and at the same time build stocks will depend increasingly on the ability of national production to grow more strongly.

Thus, the 2026 balance presents a rather unusual situation. On an annual basis, the balance between production and consumption improves compared with 2025, but on a monthly basis stocks at times fall to very low levels. The improvement in stocks at the end of Q4 also does not fully indicate greater supply slack, because it coincides with a substantial decline in exports. This underscores that the challenge ahead is not only to keep the balance in equilibrium on an annual basis, but also to ensure that adequate supply is available to meet domestic demand, exports, and inventories simultaneously.



CHAPTER 3. CLIMATE OUTLOOK AND ITS IMPACT ON PALM OIL PRODUCTION

Palm oil production is determined not only by crop conditions at the time of harvest, but is the result of a formation process that takes place over a long period. Climate conditions, particularly water availability, can therefore affect production across several time horizons. Some of the effects can be seen in crop conditions and operational activities in the current period, while the effects on flower and bunch formation may only be reflected in production several months to several years later.

This characteristic is important in reading the 2026 production outlook, as discussed in Chapter 2. Indonesia's palm oil production in 2026 is projected to reach approximately 52.4 million MT, an increase from the previous year, although growth is relatively limited for reasons that can be traced to various factors, one of which is climate.

On that basis, the discussion of climate in this chapter is directed at examining climate hazard conditions entering Q4 2026, their exposure across palm oil production regions, and the mitigation measures needed to maintain production momentum amid increasing climate variability. This approach also takes into account that the biological consequences of the 2026 climate pressures are reflected partly in Q4 2026 production and partly in production in subsequent periods.

3.1 *Climate Hazard* Q4 2026

Indonesia entered Q4 2026 after a dry season that was drier than normal in many regions. Toward the end of September, El Niño had developed into the very strong category. This is important for the palm oil sector because El Niño is generally associated with reduced rainfall formation in parts of Indonesia, especially when it occurs during the dry season and the transition to the rainy season. As of mid-September, about 81% of Indonesia's Seasonal Zones (Zona Musim) were still in the dry season, and 1,637 observation points had

experienced more than 60 consecutive days without rain (BMKG, 2026d).

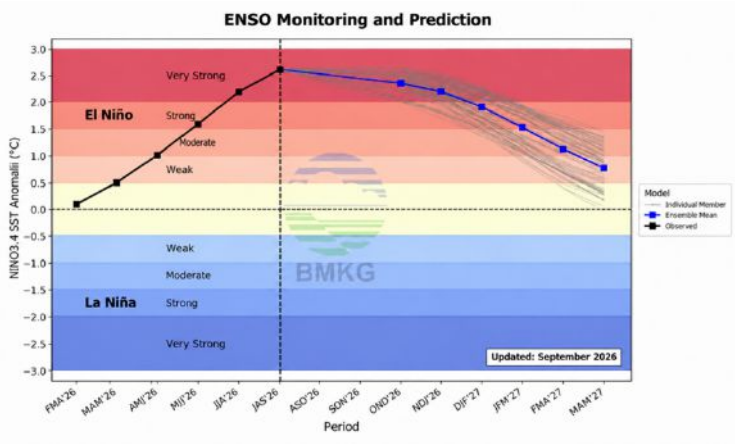


Figure 11. ENSO Monitoring and Forecast, September 2026
Source: BMKG (2026c)

ENSO monitoring shows that the NINO3.4 sea surface temperature anomaly reached approximately 2.6°C in the July–August–September 2026 period, placing El Niño in the very strong category. Modeling results indicate that its intensity is projected to decline gradually after September. The ensemble mean remains at around 2.4°C in October–November–December 2026 and approximately 2.2°C in November–December 2026–January 2027, before continuing to weaken in early 2027. Thus, Q4 2026 is still under the influence of a strong El Niño, but with a tendency toward weakening.

At the same time, developments in the Indian Ocean Dipole (IOD) need to be monitored because they can amplify or reduce the influence of ENSO on rainfall conditions in Indonesia. As of September 2026, the observed IOD index was still near the upper limit of neutral conditions after rising gradually since mid-year.

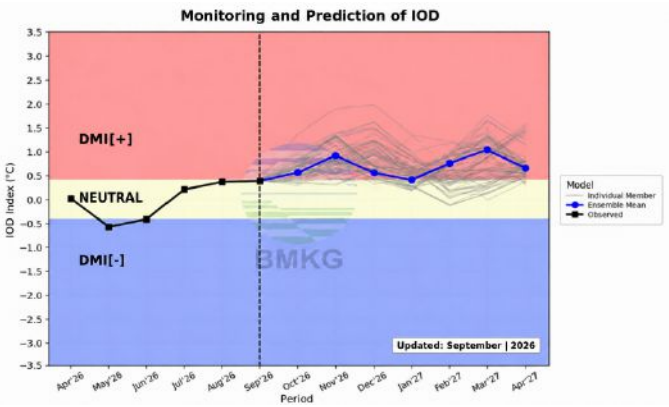


Figure 12. IOD Monitoring and Forecast, September 2026
Source: BMKG (2026c)

Unlike ENSO, which has already shown strong conditions based on observations, the positive IOD signal in Q4 2026 still comes mainly from forecasts. The ensemble mean projects the IOD index to rise to approximately +0.6°C in October, +0.9°C in November, and approximately +0.6°C in December 2026. Although there is a fairly wide spread among model members, these projections indicate the potential for a positive IOD during Q4 2026 that could reinforce the tendency toward dry conditions in parts of Indonesia.

The combination of a still-strong El Niño and a potentially developing positive IOD means that climate pressure at the start of Q4 still warrants caution. However, this does not mean that all regions of Indonesia will experience drought pressure of the same intensity. The influence of global climate phenomena interacts with seasonal developments and regional atmospheric conditions, so the distribution of monthly rainfall is a more direct indicator of how the hazard is developing at the regional level.

BMKG forecasts show a fairly clear change over the course of Q4. In October, about 49.9% of Indonesia's area is forecast to receive less than 100 mm of rainfall for the month, while about 45.1% falls in the medium-rainfall category. Areas with low rainfall are still found in, among others, the southern part of Sumatra and several parts of

Kalimantan. This indicates that the low-rainfall pressure that developed during Q3 may still continue into early Q4.

The situation begins to change in November. The proportion of the area with low rainfall is forecast to shrink to about 17%, while about 70% of the area begins to receive rainfall in the medium category (BMKG, 2026e). Entering December, rainfall conditions are expected to improve further, and no area is forecast to have a high probability of extremely low rainfall below 50 mm per month. Thus, October–December shows a transition from dry-condition pressure at the start of the quarter toward a gradual increase in rainfall at the end of the year (BMKG, 2026c).

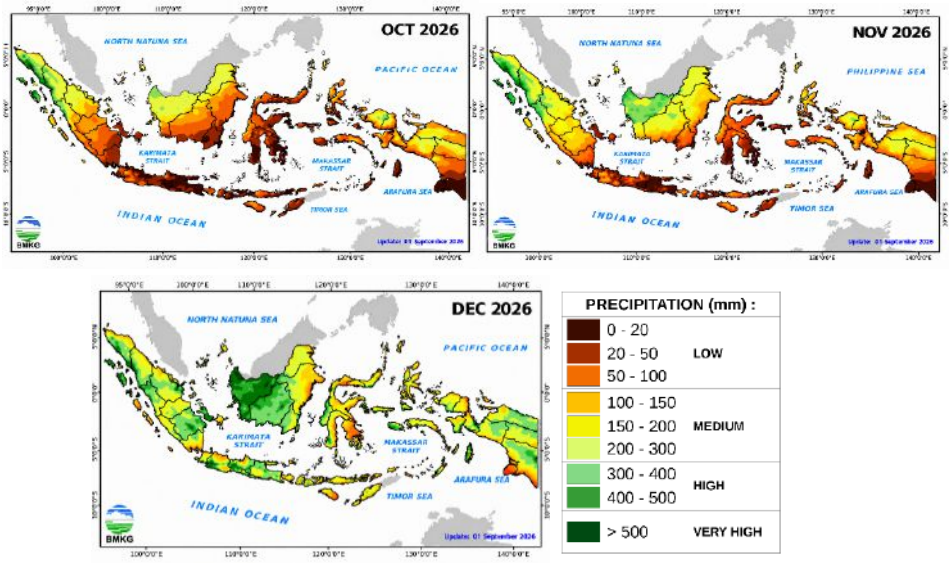


Figure 13. Precipitation Forecast for October–December 2026
Source: BMKG (2026b)

This improvement in rainfall does not mean that crop conditions and water availability immediately return to normal. Q4 begins after some regions experienced a fairly long dry period during Q3. In oil palm plantations, an accumulated rainfall deficit can gradually reduce soil water availability, so that conditions at the start of Q4 are determined not only by the amount of rain falling in October, but also by the water stress that had already built up beforehand. The Indonesian Agency for Meteorological, Climatological, and Geophysics (BMKG) also

indicates pockets of moderate to low water availability in a number of oil palm growing centers in Sumatra and Kalimantan (BMKG, 2026a).

Thus, the Q4 2026 climate hazard is more accurately read as a trajectory of changing conditions than as a single state prevailing throughout the quarter. October still carries the pressure of dry conditions from Q3, while November–December is the period when rising rainfall gradually improves water availability. The implications for production therefore depend heavily on the location of production centers, the duration of prior water stress, and the speed at which water conditions recover in each region (BMKG, 2026b).

Thus, the main issue in Q4 2026 is not merely that Indonesia is experiencing El Niño, but that the start of Q4 unfolds when a number of regions are already carrying a "legacy" of dry conditions from Q3, while the recovery in rainfall only proceeds gradually toward November–December.

Box 1. How to Read the Q4 2026 Climate Hazard Indicators?

Indicators	Conditions	Interpretation
ENSO/El Niño	ENSO index for July–August–September 2026: +2.6°C; Niño3.4 for the first ten days of September: +2.76°C	ENSO describes the sea surface temperature anomaly in the tropical Pacific. A value of ≥+2.0°C indicates a very strong El Niño. However, the magnitude of the ENSO index **does not directly indicate the severity of drought in each region**; its impact needs to be read together with actual and regional rainfall conditions.
IOD/Dipole Mode Index	August: +0.37; first ten days of September: +0.394; weekly monitoring on September 15: approximately +0.65	The IOD describes the difference in sea surface temperature anomalies between the western and eastern Indian Ocean. A positive IOD can reinforce the tendency toward reduced rainfall in parts of Indonesia. Because Q4 conditions are still a **forecast**, its development needs to be monitored continuously.
Monthly Rainfall	October: 49.92% of the area in the low category; November: 16.97% of the area in the low category	Indicates the **absolute amount of rainfall** received. BMKG classifies rainfall as low at 0–100 mm/month, medium at 100–300 mm, high at 300–500 mm, and very high at >500 mm. The decline in the area with low rainfall indicates easing dry pressure toward the end of Q4.
Rainfall relative to normal	October–December: generally below normal to normal	Differs from absolute rainfall. Below Normal means the rainfall received is <85% of its climatological norm. A region can therefore receive rainfall in the medium category yet still be classified as Below Normal.
Consecutive Dry Days (Hari Tanpa Hujan, HTH)	1,637 points had recorded >60 consecutive dry days as of September	HTH indicates the **accumulated dry period** before entering Q4. A value of >60 days is categorized as extreme. This indicator is important because crop conditions and water availability at the start of Q4 are determined not only by October rainfall, but also by the dry pressure that had already built up beforehand.

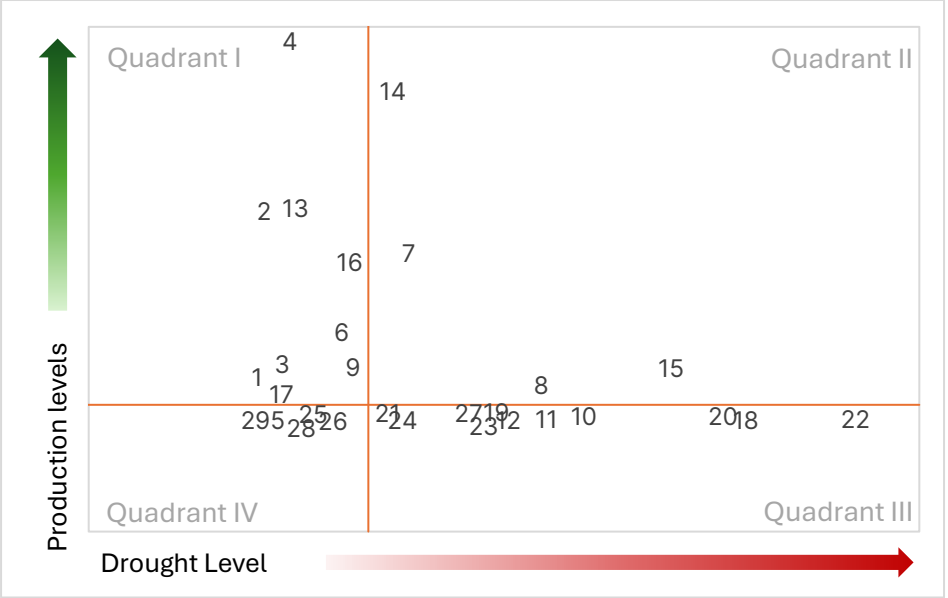
3.2 *Spatial Exposure* and Mitigation Priorities

The implications of dry conditions for the national palm oil industry are determined not only by the intensity of the hazard, but also by

where that pressure falls relative to the production base. Indonesia's palm oil production is concentrated mainly in Sumatra and Kalimantan. Six provinces (Riau, Central Kalimantan, West Kalimantan, North Sumatra, South Sumatra, and East Kalimantan) account for about 76.09% of national palm oil production (Directorate General of Plantations, 2025; IPOSS, 2025). Riau is the largest producer with 10.41 million MT, or 19.86% of national production, followed by Central Kalimantan with 9.03 million MT, or 17.23%, West Kalimantan with 10.99%, North Sumatra with 10.96%, South Sumatra with 8.76%, and East Kalimantan with 8.29%.

However, the provinces with the largest production are not necessarily the regions experiencing the highest drought pressure. To assess the materiality of the risk and at the same time determine the direction of mitigation, the level of drought is compared with the size of palm oil production in each province. This approach allows climate pressure to be read together with the importance of each region to national production.

The matrix is constructed using two variables: the drought level and the production level of each province. The drought level is shown on the horizontal axis and increases from left to right, while the production level is shown on the vertical axis and increases from bottom to top. Quadrant I shows regions with relatively high production but relatively low drought levels; Quadrant II shows regions where both production and drought levels are relatively high; Quadrant III shows regions with relatively high drought levels but relatively low production; while Quadrant IV shows regions where both production and drought levels are relatively low. Each province is represented by a number from 1 to 29, as shown in the legend of Figure 14.



No	Province	No	Province	No	Province
1	Aceh	11	West Java	21	West Sulawesi
2	North Sumatera	12	Banten	22	Southeast Sulawesi
3	West Sumatra	13	West Kalimantan	23	Maluku
4	Riau	14	Central Kalimantan	24	North Maluku
5	Riau Islands	15	South Kalimantan	25	Papua
6	Jambi	16	East Kalimantan	26	West Papua
7	South Sumatra	17	North Kalimantan	27	South Papua
8	Bangka Belitung Islands	18	Gorontalo	28	Central Papua
9	Bengkulu	19	Central Sulawesi	29	Southwest Papua
10	Lampung	20	South Sulawesi		

Figure 14. Matrix of Palm Oil Production Exposure to Drought Levels in Q4 2026
Source: Analysis by IPOSS (2026)

Based on this matrix, mitigation attention needs to be directed primarily at **Quadrant II**, covering Central Kalimantan, South Sumatra, the Bangka Belitung Islands, and South Kalimantan. A position in this quadrant indicates a combination of a relatively high drought level and a production base that is also above the benchmark threshold. The matrix does not directly show how much plantation area or production volume is affected by drought, but serves as a screening tool to identify regions requiring greater attention.

Central Kalimantan (14) has the greatest materiality in this group because it accounts for about 17.23% of national production. In October, the low-rainfall zone is forecast to cover Sukamara, Kotawaringin Barat, Seruyan, Kotawaringin Timur, Pulang Pisau, and Kapuas through to the Barito area (BMKG, 2026f). This pressure had developed before Q4, as in September parts of Kalimantan showed crop water availability in the low category before a forecast improvement beginning in October and November (BMKG, 2026a). Given the large production base, mitigation needs to be directed primarily at production centers still experiencing water availability pressure at the start of Q4.

South Sumatra (7) is also in Quadrant II and produces approximately 4.59 million MT of palm oil, or 8.76% of national production. In October, low rainfall is forecast in a number of areas, including Musi Banyuasin, Banyuasin, Muara Enim, and Ogan Komering Ilir (BMKG, 2026f). Mitigation therefore needs to focus on production areas that overlap with dry conditions, particularly to maintain water availability and crop conditions, and to anticipate the risk of fires and disruptions to plantation activities.

South Kalimantan (15) and **the Bangka Belitung Islands (8)** complete the Quadrant II group with smaller production weights. South Kalimantan accounts for about 2.8% of national production, but most of its area is forecast to be in the low-rainfall category in October. The Bangka Belitung Islands also have a relatively high drought level, with a production base that has passed the benchmark threshold in the matrix. In both provinces, mitigation remains necessary, especially in production areas under dry-condition pressure, although their materiality to national production volume is smaller than that of Central Kalimantan and South Sumatra.

The matrix also shows provinces with **a large production base but a drought exposure level that is not high**, such as Riau, North Sumatra, West Kalimantan, and East Kalimantan, which are in Quadrant I. All four have a large production base, but their aggregate provincial drought levels are relatively lower. Riau, for example,

accounts for nearly one-fifth of national production, but most of its area is forecast to receive rainfall in the medium category in October. North Sumatra also has a large production base, with October–November forecasts dominated by medium to high rainfall. For this group, the more appropriate approach is **intensive monitoring and localized mitigation**, rather than treating the entire province as a high-risk area.

West Kalimantan and East Kalimantan illustrate the importance of this approach. Rainfall conditions in West Kalimantan vary considerably between the north and the south, while in East Kalimantan a number of areas, such as Kutai Barat, Kutai Kartanegara, Paser, Kutai Timur, and Penajam Paser Utara, are still forecast to experience low rainfall. Although in aggregate they are in Quadrant I, production pockets that overlap with dry conditions still require monitoring and mitigation measures.

Mitigation needs are expected to be highest at the start of Q4. Entering November, areas with low rainfall begin to shrink in a number of production centers. Central Kalimantan and East Kalimantan largely shift to the medium-rainfall category, West Kalimantan receives higher rainfall, and conditions in South Kalimantan also begin to improve. Thus, **October is the main window for mitigating dry conditions**, while rainfall developments in November–December will determine the speed at which water availability recovers in each region (BMKG, 2026e).

The exposure matrix therefore not only describes the distribution of risk, but also serves as the basis for setting **mitigation priorities spatially**. Quadrant II requires greater attention because it combines relatively high drought levels and a relatively large production base. Meanwhile, the large production centers in Quadrant I still need to be monitored because climate pressure can develop locally. This approach allows mitigation resources to be directed more proportionately in line with the level of hazard, the size of the production base, and the distribution of climate pressure within each region.

3.3 Climate Implications for Production and the Direction of Mitigation

The production outlook in Chapter 2 shows that Indonesia's palm oil production in 2026 is still expected to increase compared with the previous year, although the increase is relatively limited. This indicates that the climate pressure that developed in 2026 cannot simply be read as a decline in production in the same period. The production harvested in 2026 is the result of a bunch formation process that began long before, so climate conditions in earlier periods also determine the production potential available in the current year.

This relationship is consistent with the biological nature of oil palm production formation. Wandri et al. (2025), based on 7–9 years of monthly yield data from four fertilizer trials in South Sumatra and Central Kalimantan, analyzed the relationship between FFB yield and the water stress index (WSI) and vapor pressure deficit (VPD) up to about 40 months before harvest. The analysis shows a negative relationship between monthly yield and water stress and VPD, particularly in the periods associated with inflorescence abortion and sex differentiation. These findings indicate that the effect of climate conditions on production can emerge with different lags according to the crop's reproductive development phase.

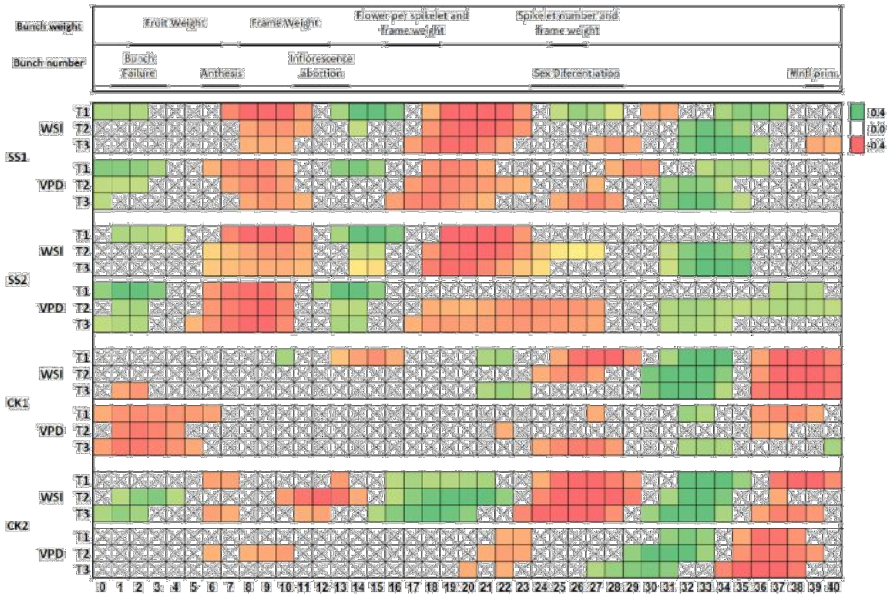


Figure 15. Relationship of the Water Stress Index (WSI) and Vapor Pressure Deficit (VPD) with FFB Production at Various Periods before Harvest
Source: Wandri et al. (2025)

The matrix in Figure 15 should be read as the relationship between environmental conditions in various periods before harvest and the yield subsequently observed, not as a production forecasting calendar. The time axis shows the months before the yield is harvested, while the differences in the pattern of the relationship reflect that the crop's sensitivity to water stress changes with the phase of bunch development. Biologically, oil palm bunch formation takes about 39 months from primordia initiation to harvest, with sex differentiation occurring about 24–28 months before harvest and inflorescence abortion about 10–12 months before harvest.

This characteristic also shows the limits of translating the 2026 dry episode directly into production loss figures for 2027, 2028, or 2029. Building a complete projection based on this mechanism requires a series of information on climate and crop conditions over the entire bunch formation period. Climate conditions in Q4 2026 represent only part of that series. This Outlook therefore does not quantify the size of production losses in subsequent years based solely on the 2026 El Niño episode.

In the short term, rising rainfall toward the end of Q4 provides room for improved crop water availability and reduced dry-condition pressure in a number of production centers. This is consistent with the outlook in Chapter 2 that 2026 production still has room to increase compared with the previous year. Part of the production dynamics at the boundary between Q3 and Q4 may also be related to changes in the distribution of harvest timing for bunches already in the final phase of development.

In this context, the dry conditions and fires that occurred toward the end of Q3 need to be viewed not only in terms of water availability, but also in terms of a possible reduction in solar radiation received as a result of haze. Persistent haze can reduce the light reaching the canopy, thereby limiting photosynthesis and assimilate formation. For bunches already in the final phase of development, this combination of water stress and reduced radiation has the potential to slow bunch filling and development toward harvest ripeness. This mechanism may be one of the factors contributing to the shift of part of production from late Q3, especially September, to early Q4, although the size of the effect cannot yet be quantified.

This short-term mechanism needs to be distinguished from the effect of climate pressure on the crop's reproductive phases, which has a longer lag. The 2026 dry episode is therefore more appropriately treated as a risk factor for the continuity of production momentum, not as a basis for concluding that production will fall in a particular year. The direction of production after 2026 will depend on the combination of climate conditions before and after the episode, the duration and intensity of water stress, the crop's development phase when the stress occurs, palm age, soil conditions, and the effectiveness of plantation management. The findings of Wandri et al. (2025) also show that yield variability is not determined solely by climate factors, because the crop's internal production cycle and management factors also affect yield.

On that basis, mitigation needs to be carried out over two horizons. **Short-term mitigation** is directed mainly at maintaining crop

conditions while keeping plantation activities running normally during the dry period. Its priorities include maintaining water availability, reducing water loss from the plantation system, preserving soil moisture, ensuring that water management infrastructure functions properly, and stepping up monitoring of blocks showing water stress. In areas with high fire risk, the readiness of water sources, water points, pumps and firefighting equipment, patrols of fire-prone areas, worker protection, and surveillance of vulnerable areas need to be strengthened. On peatland, water table management and rewetting become increasingly important to prevent the land from becoming more flammable.

These needs are becoming more important because dry-condition pressure ahead of Q4 has been accompanied by increased hotspot activity in a number of major production regions. On September 7–16, 2026, BMKG recorded 3,177 high-confidence hotspots in Central Kalimantan, 1,305 in South Sumatra, and 1,088 in West Kalimantan. These figures cannot be equated with the number of fire incidents or the area of land burned, but they indicate increased vulnerability to the emergence and spread of fire during the dry period. BMKG forecasts also indicate that the risk of hotspots emerging in October remains relatively high in South Kalimantan, Central Kalimantan, and South Sumatra. This is important because some of these regions are also palm oil production centers that, in the preceding exposure analysis, face relatively high drought pressure.

The impact of the fire season on production can occur through several channels. Fires that reach parts of plantation areas can cause direct damage to palms and reduce production potential in the affected areas. Meanwhile, haze can affect the crop's physiological condition through reduced solar radiation, while also preventing plantation activities from running normally. Heavy smoke conditions can restrict field work and labor mobility, disrupt harvest rotations and FFB transport, and create obstacles in plantation logistics. Thus, the effect of the fire season on production comes not only from areas directly affected by fire, but also from physiological stress caused by

smoke conditions, the loss of effective working days, and the disruption of normal harvesting and plantation operations.

The implication is that fire preparedness is not only part of environmental protection, but also part of production continuity management. Additional spending on patrols, pumping and water management, maintenance of water points, firefighting equipment, personal protective equipment, and monitoring of field conditions needs to be viewed as risk-control expenditure required to reduce the likelihood of production disruptions when climate and fire risks rise.

Meanwhile, **long-term mitigation** needs to be directed at increasing the resilience of the production system to climate variability. Empirical findings show that improved nutrition can raise productivity under favorable conditions, but the ability of fertilization to compensate for yield losses becomes limited when water is the main limiting factor. Adaptation strategies therefore cannot rely solely on increasing nutrient inputs, but need to increasingly position water management and soil moisture conservation as part of productivity management.

On mineral soils, this approach may include improving the soil's water-holding capacity, soil and water conservation, especially on sloping land, the use of biomass and organic matter to help retain moisture, and appropriate cover vegetation management. On land with water management systems, including peat, the strategy must be adapted to local hydrological characteristics and directed at controlling the water table and preventing over-drainage. In the longer term, the use of planting material more tolerant of water deficit, improved field upkeep, stronger climate–crop monitoring systems, and the development of water management interventions are important parts of adaptation.

The experience of 2026 also shows the need for more integrated warning and decision-making systems at the plantation level. ENSO and IOD information is important as an early indicator, but operational

decisions require information closer to plantation conditions, such as actual rainfall, consecutive dry days, water balance, soil moisture, the crop's vegetative condition, and production developments. **During fire periods, this information needs to be supplemented with monitoring of hotspots, fire incidents around the plantation, haze intensity, and disruptions to harvesting and FFB transport**. By combining this information, mitigation measures can be taken before climate pressure develops into more severe disruption to the crop or to operations.

From a longer-term perspective, historical climate information also opens up opportunities to strengthen production forecasting systems. The biological framework shown by Wandri et al. (2025) indicates that environmental conditions during bunch formation carry information about yield potential in subsequent periods. However, developing such models requires a consistent database of climate, crop conditions, and production over several years. Strengthening the time-series database at the plantation level is therefore an important step if the industry wishes to move from a monitoring system toward predictive plantation management.

Thus, climate conditions in Q4 2026 do not change the main direction of the production outlook in Chapter 2, specifically where national production is still expected to increase in 2026. Rather, the climate discussion shows that this room for production growth needs to be protected. Improving rainfall toward the end of the year provides room for water conditions to recover, while the easing of fires and haze can support the normalization of plantation activities. This also provides a basis for seeing that part of the production increase in early Q4 may come from the normalization of harvesting and changes in the distribution of harvest timing after the pressure of dry conditions and smoke in late Q3, not solely from an increase in production capacity. At the same time, the dry episode that has already occurred still needs to be mitigated, because part of the crop's response may emerge after a certain time lag.

The climate challenge is therefore not merely to determine whether production in a given quarter rises or falls. The more important challenge is to ensure that dry-condition pressure and fire risk do not reduce the industry's ability to increase production sustainably in subsequent periods. In a situation where domestic demand for palm oil continues to rise and the room for exports depends increasingly on supply growth, **climate risk mitigation becomes part of the strategy to maintain room for growth in national production**.



CHAPTER 4. CPO PRICE OUTLOOK FOR Q4 2026

The Q4 2026 CPO price outlook was prepared to assess the direction of global and domestic CPO price movements from October through December 2026. As a commodity, CPO prices are not determined independently, but are linked to value chains that operate simultaneously in both global and local markets. This interdependence has existed for decades, since the formation of modern commodity markets in Europe and Malaysia, where prices are determined through the interaction of market participants, supply conditions, demand, and expectations regarding the future.

Price projections can therefore be made using the ARIMAX (Autoregressive Integrated Moving Average with Exogenous Variables) model approach. This model can be used to analyze time-series data involving more than one explanatory variable, so that CPO price movements are analyzed not only from their own historical price patterns, but also through other external variables reflecting market dynamics, supply, demand, and policy.

In general, the Q4 2026 CPO price outlook should be read as a continuation of the increasingly tight national palm oil balance discussed in Chapter 2. Production in Q4 increases compared with the previous quarter, but domestic consumption rises due to the implementation of B50, exports become an adjustment variable, and ending stocks remain at historically low levels. These conditions are among the fundamental factors supporting CPO prices in Q4 2026. However, the direction of price movements is still influenced by broader market dynamics, including developments in the prices of other vegetable oils, stock availability, export demand, and global market conditions.

4.1 Global CPO Price

The global CPO price forecast in this analysis refers to the CPO price on the Malaysia Derivatives Exchange (MDEX) as one of the main benchmarks for international trade. The MDEX price reflects the price

of CPO traded on Malaysia's derivatives market and is widely used as a reference for price formation and for market expectations regarding international CPO price movements.

In this Q4 Outlook, there is a shift in the reference data used to observe global palm oil prices: whereas the CIF Rotterdam CPO price was previously used, the MDEX price is now used as the global market reference. This is in line with Mistry (2025) in the 2026 Price Outlook presented at IPOC in Bali last year, which stated that MDEX CPO futures prices are the main indicator in projecting global palm oil prices, while other vegetable oils such as soybean oil use CBOT futures as their reference. It is also in line with the view of Thomas Mielke (2026) that the CIF Rotterdam CPO price is increasingly losing its function as a representative benchmark due to changes in the structure of global trade, so that a price reference based on the Malaysian market better reflects global palm oil trading activity and price discovery.

The global CPO price forecast for Q4 2026 uses an ARIMAX model that takes into account several key variables: the previous month's global CPO price (MDEX price), soybean oil prices, the combined CPO ending stocks of Indonesia and Malaysia, and Indonesia's total exports of palm oil products. These variables were selected because they represent historical price factors, global market benchmarks, substitute vegetable oils, supply availability, and supply capacity for exports.

The previous month's global CPO price (MDEX price) is used to capture price movement patterns from the prior period. This is important because commodity prices generally tend to follow historical trends in the short term. Meanwhile, the CPO price on the MDEX is used as a market direction indicator because it reflects the expectations of market participants in Malaysia and Asia regarding demand conditions, supply, and regional policy sentiment. Soybean oil prices are included as a benchmark variable because soybean oil is one of the primary vegetable oil substitutes for CPO in the global market.

On the supply side, CPO ending stocks in Indonesia and Malaysia are used to reflect the level of palm oil availability in these two major producing countries. The lower the available stock, the greater the potential for upward price pressure, because Indonesia and Malaysia account for more than 80% of global palm oil production. Meanwhile, total exports of palm oil products are used to capture the strength of global demand. If exports increase, this may indicate strong foreign demand; conversely, if exports decline due to supply constraints, the global market may respond with rising prices.

The performance of the forecasting model was also evaluated using several forecast error measures, including Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), Mean Percentage Error (MPE), and Mean Absolute Percentage Error (MAPE). The evaluation results show that the selected model has a relatively lower forecast error than the other alternative models tested. The price forecasts shown in Figure 16 can therefore be considered reliable.

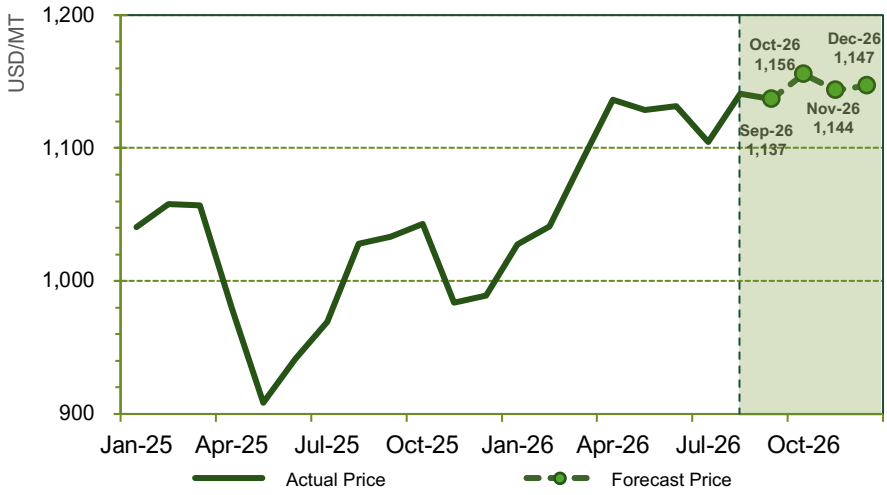


Figure 16. Global CPO Prices (BMD), Current and Forecast (Q4 2026)
Sources: IPOA (2026), compiled by IPOSS (2026c) and analysed by IPOSS

Based on the forecast results, the global CPO price (BMD price) rises to USD 1,156/MT in October from USD 1,137/MT in September. The price for November is projected to correct slightly to USD 1,144/MT and remain relatively stable at USD 1,147/MT in December 2026.

Thus, prices in Q4 2026 are expected to move relatively steadily within a range of USD 1,144–1,156/MT.

The forecasting model shows that the global CPO price in Malaysia is relatively strongly influenced by CPO absorption in Indonesia's domestic market, particularly following the increase to the B50 biodiesel mandate. This is reflected in the rise in CPO prices in October 2026. However, in the following months, November and December, prsices ease again due to the influence of combined Indonesian and Malaysian stocks, which are expected to increase.

On the other hand, price increases are also limited by competition with other vegetable oils. When CPO prices become too high relative to soybean oil, sunflower oil, or rapeseed oil, part of the demand may shift to alternative vegetable oils. This combination of factors means that CPO prices in Q4 2026 are likely to remain stable.

4.2 Domestic CPO Price

In general, domestic and global CPO prices are fairly strongly linked. Under ceteris paribus conditions, a strengthening of CPO prices in the global market will push up domestic CPO prices, and vice versa. However, the transmission of global prices to the domestic market does not always occur directly and proportionally, because a number of other factors also influence CPO price formation in the domestic market.

From a supply–demand perspective, domestic prices are influenced by the availability of supply and domestic demand for CPO, as well as by the volume that can be allocated to the export market. On the other hand, the linkage with the global market is also influenced by policies that change trade incentives, including the Export Duty and Export Levy. Thus, the domestic CPO price in a given period can be said to be the result of the interaction between global prices, the domestic supply–demand balance and export volumes, and the policies that affect the incentives between selling to the domestic market and exporting.

The domestic CPO price forecast is compiled using an ARIMAX model that incorporates the previous month's domestic CPO price, the MDEX price, total domestic consumption of CPO and CPKO, Indonesia's total exports, total domestic production of CPO and CPKO, total ending stocks, the Export Levy, the Export Duty, and the CPO Reference Price. These variables are used to capture the interactions between historical prices, global market benchmarks, domestic supply conditions, domestic demand, exports, and policy factors.

The previous month's domestic CPO price is used to capture short-term price movement patterns. The MDEX price serves as an external benchmark reflecting the direction of the global market. On the domestic front, total local consumption indicates CPO demand for food, oleochemicals, and biodiesel. Total exports reflect the absorption of CPO and its derivatives in foreign markets, while total production and ending stocks illustrate the availability of domestic supply.

The model also incorporates the Export Levy and Export Duty because both affect the netback price received by exporters. When the CPO Reference Price rises in line with higher global prices, the Export Levy and Export Duty may also increase. A higher export burden reduces the net value received by exporters, so that the incentive to export CPO may weaken, while at the same time part of domestic demand strengthens with the B50 program. These conditions may ultimately hold back the rise in domestic CPO prices.

Based on the modeling results, the domestic CPO price forecast is shown in Figure 17. The domestic CPO price in October is expected to correct by Rp260/kg from its September level to Rp15,678/kg, and is expected to show no significant change in November, with a slightly lower estimated price of Rp15,666/kg. The domestic CPO price is then expected to rise again to Rp15,851/kg in December 2026. Thus, prices in Q4 2026 are expected to be relatively stagnant within a range of Rp15,666–15,851/kg, without room to rise further.

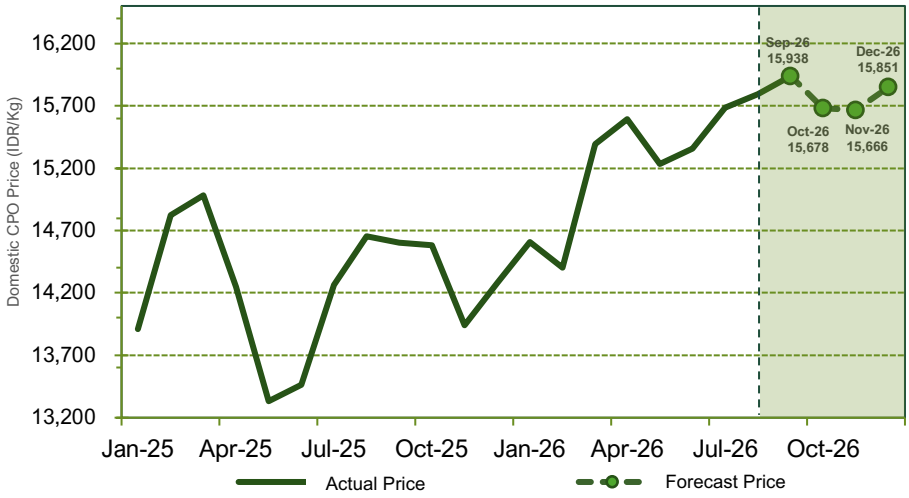


Figure 17. Actual and Forecast Domestic CPO Prices
Sources: IPOA (2026) compiled by IPOSS (2026c) and analysed by IPOSS

These domestic price movements reflect pressures working in **both directions**. The first is the increase in domestic CPO demand, mainly to meet the B50 biodiesel mandate. At the same time, a second factor is at work: the increase in the Export Levy and Export Duty resulting from the higher projected CPO Reference Price. The combined level of the Export Levy and Export Duty can depress exporters' netback price, reducing the benefit from higher export prices. This combination of factors is expected to keep domestic CPO prices in Q4 2026 below Rp15,900/kg.



CHAPTER 5. OUTLOOK FOR PALM OIL EXPORT LEVIES AND EXPORT DUTIES Q4 2026

CPO price developments not only affect the revenue earned by business actors, but also determine the size of the export burden through the Export Levy and Export Duty mechanisms. Both instruments are government policies governed by Minister of Finance Regulations (PMK): PMK No. 9 of 2026 for the Export Levy and PMK No. 68/PMK.010/2025 for the Export Duty. The two have different setting mechanisms. The CPO Export Levy is set as a percentage of the Reference Price, while the Export Duty uses a tiered tariff structure based on CPO Reference Price ranges.

This difference in mechanisms means that changes in the Reference Price do not always result in proportional changes in the export burden. As long as the Reference Price remains within the same tariff line, changes in the total export burden come mainly from changes in the Export Levy. However, when the Reference Price crosses the threshold of a tariff line, the Export Duty can rise in a discrete step, so that the increase in the total export burden becomes larger than the change in the Reference Price.

In this context, the CPO Reference Price outlook becomes material to analyze because it allows the Export Levy and Export Duty that the industry will face during Q4 2026 to be estimated. This chapter therefore begins with the CPO Reference Price outlook, followed by projections of the Export Levy and Export Duty, as well as the implications of changes in these two instruments for the export burden and the dynamics of the domestic palm oil market.

5.1 CPO Reference Price Outlook for Q4 2026

The CPO Reference Price plays an important role in Indonesia's palm oil trade policy because it serves as the basis for setting the Export Levy and Export Duty. The Reference Price is set every month by the Ministry of Trade and is then used as the basis for determining the Export Levy and Export Duty applicable in that period.

The CPO Reference Price is determined by taking into account CPO price developments on three main price sources: the Malaysia Derivatives Exchange (MDEX), the Indonesia Commodity and Derivatives Exchange (ICDX), and CIF Rotterdam. It is calculated using the average price during an observation period before the month in which the Reference Price applies. In the approach used in this Outlook, the observation period follows a window from the 20th of the month two months earlier to the 19th of the preceding month, using the two closest benchmark prices. Under this mechanism, the Reference Price calculated and applied in a given month essentially reflects CPO price developments in the preceding period.

The Reference Price projections in this chapter are related to the global CPO price outlook discussed in Chapter 4. The MDEX price projections in Chapter 4 provide an indication of the direction of global CPO prices, but MDEX is only one of the price sources used to form the Reference Price. In addition to MDEX, the Reference Price calculation also takes into account CPO prices on ICDX and CIF Rotterdam. Therefore, to estimate the Reference Price, developments in all three price sources need to be projected in line with the observation period used in the CPO Reference Price calculation mechanism.

This characteristic also means that the CPO Reference Price period does not fully coincide with the current market price period. The Reference Price set for a given period actually reflects market price conditions in the preceding period. This timing difference is important to note, because the CPO price outlook in Chapter 4 cannot be compared directly with the Reference Price outlook for the same period.

The Reference Price forecasting approach in the Q4 Outlook has been refined based on an evaluation of the Q3 Outlook projections, mainly to adjust the forecasting method to the relatively short projection horizon and the nature of the Reference Price observation period. In the Q4 Outlook, the CPO Reference Price projections are

prepared by taking into account historical price developments on the three price sources used.

Based on this approach, the CPO Reference Price at the start of Q4 shows an increase compared with the end of Q3. The Reference Price for October 2026 was set at USD 1,042.2/MT, up from USD 1,007.5/MT in September 2026. In the context of setting the Export Duty tariff, this increase is material: although it rose by only 3.4%, the Reference Price has crossed into Tariff Line IX, which covers the range of over USD 1,030/MT up to USD 1,080/MT. The CPO Reference Price is not expected to fall through December, with estimates of USD 1,058.7/MT in November and USD 1,065.7/MT in December 2026, as shown in the following figure.

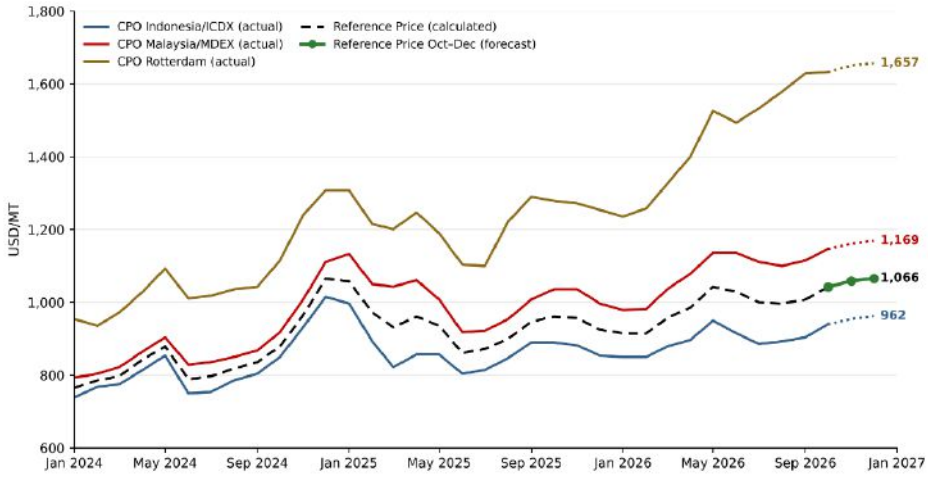


Figure 18. Forecasting Prices on Three Exchanges and Reference Prices for Q4 2026
Source: IPOSS (2026b), analysed

Movements in the CPO Reference Price throughout Q4 will subsequently determine the Export Levy and Export Duty rates that apply. Although the projected increase in the Reference Price is relatively limited, its impact on the total export burden is important to note. This is the focus of the next section.

5.2 Outlook for Export Levy in Q4 2026

The CPO Export Levy is calculated as a specific percentage of the Reference Price. In accordance with PMK No. 9 of 2026, the CPO Export Levy for this period is set at **12.5% of the Reference Price**. Under this mechanism, changes in the Reference Price directly affect the amount of the Export Levy imposed.

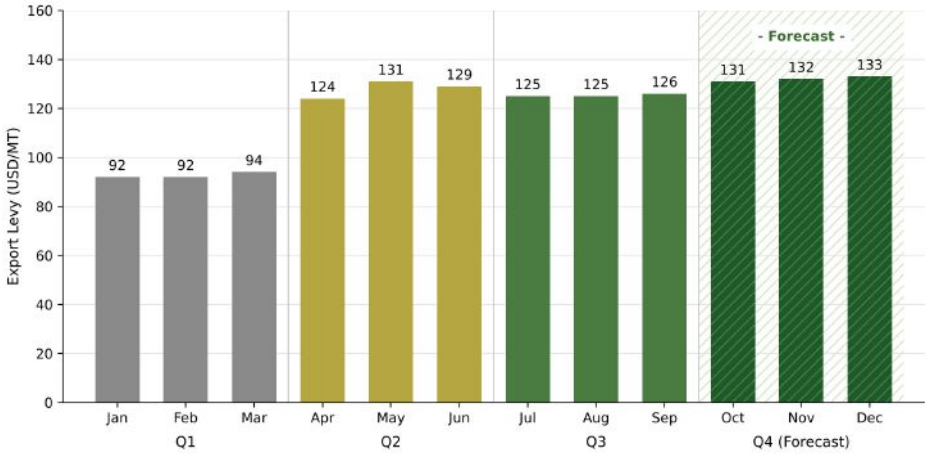


Figure 19. CPO Export Levy, Q1–Q4 2026
Source: Minister of Finance Regulation Number 9 of 2026 (2026), analysed by IPOSS

In line with developments in the Reference Price, the CPO Export Levy in Q4 2026 is expected to range from USD 130 to 133/MT. In October 2026, the Export Levy was set at USD 130.27/MT, up from USD 125.94/MT in September due to the higher October CPO Reference Price. The CPO Export Levy is then expected to rise to USD 132.34/MT in November and USD 133.22/MT in December 2026.

These developments show that the increase in the Export Levy throughout Q4 is relatively limited because it follows changes in the Reference Price proportionally. From October to December, the Export Levy rises by only about USD 2.95/MT, in line with the Reference Price projections, which also rise only modestly. Thus, changes in the Export Levy alone do not indicate a large surge in the export burden during Q4.

The increase in the Export Levy on CPO and its derivatives compared with the previous month will affect the domestic price structure, because the Export Levy is one of the cost components that reduces the net value obtained from exporting. A higher Export Levy lowers the export netback and may ultimately limit the transmission of rising international CPO prices to the domestic market. This effect becomes even more important when the Export Levy is combined with the Export Duty, which is also a cost component in exporting.

On the other hand, however, the Export Levy is one of the main sources of funds managed by the Plantation Fund Management Agency (BPDP) from the palm oil sector. These funds play an important role in financing various strategic programs in the palm oil industry, especially the biodiesel program. The availability of BPDP funds is important for financing the gap between the price of biodiesel and the price of diesel fuel when biodiesel prices are higher. In addition to biodiesel, the funds are also used to support the oil palm replanting program for smallholders (PSR), facilities and infrastructure assistance, smallholder human resource development, scholarships, oil palm research grants, and various other palm oil industry development programs.

Thus, the Export Levy serves **two economic functions simultaneously**. On the trade side, it increases the export burden and affects the export netback. On the industrial policy side, it provides a source of financing for various strategic programs in the palm oil sector. The balance between these two functions becomes increasingly important as the financing needs of the biodiesel program rise with the implementation of the B50 mandate.

5.3 Outlook for Export Duty in Q4 2026

The CPO Export Duty is imposed based on a progressive tariff structure that follows the level of the CPO Reference Price. The rates are set through PMK No. 68 of 2025 using a system of tariff lines based on CPO Reference Price ranges of USD 50/MT. Unlike the Export Levy, which changes proportionally with the CPO Reference

Price, the Export Duty rate remains fixed as long as the CPO Reference Price stays within the same tariff line.

For example, when the CPO Reference Price is in the range of **USD 930–980/MT**, the CPO Export Duty is set at **USD 124/MT**. However, when the CPO Reference Price exceeds the upper limit of that range and moves into the next tariff line, the Export Duty rises to **USD 148/MT**. Thus, a relatively small change in the CPO Reference Price around the boundary between tariff lines can result in a relatively large increase in the Export Duty.

This characteristic makes the CPO Reference Price projection important for the industry in estimating which Export Duty tariff line is likely to apply in subsequent periods. This is especially relevant when the projected CPO Reference Price is close to the boundary between tariff lines, because a relatively small price change can significantly alter the export burden.

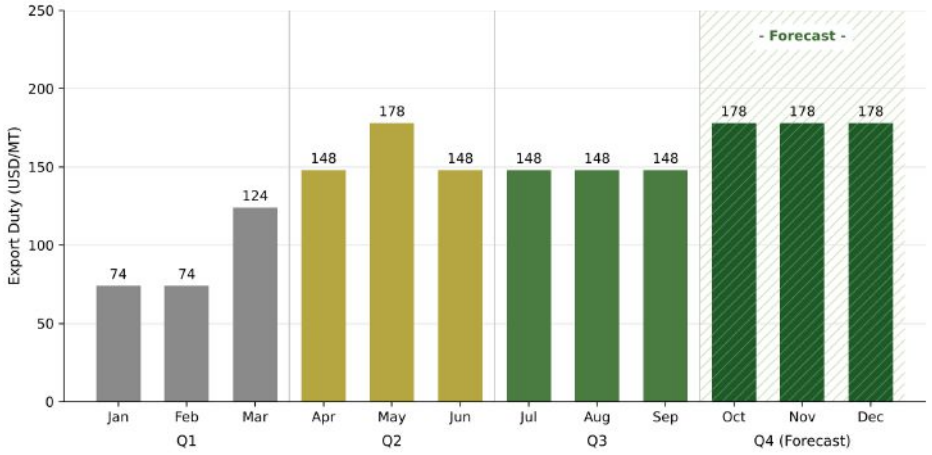


Figure 20. CPO Export Duty, Q1–Q4 2026
Source: Minister of Finance Regulation Number 68 of 2025 (2025), analysed by IPOSS

Based on developments in and projections of the CPO Reference Price, the CPO Export Duty in Q4 2026 is expected to be one tariff line higher than in September 2026 and to remain at that level throughout Q4.

In October 2026, the CPO Reference Price was set at USD 1,042.15/MT. This price level has exceeded the upper limit of Tariff Line VIII and entered Tariff Line IX, which covers CPO Reference Prices of USD 1,030–1,080/MT. With this shift, the CPO Export Duty rose from USD 148/MT in September to USD 178/MT in October, an increase of USD 30/MT.

In November and December 2026, the CPO Reference Price is projected at USD 1,059/MT and USD 1,066/MT, respectively. Both values remain within Tariff Line IX, so the CPO Export Duty is expected to stay at USD 178/MT through the end of the year.

These developments show an important characteristic of the Export Duty mechanism. An increase in the CPO Reference Price is not always followed by a gradual increase in the Export Duty. As long as the Reference Price remains within the same tariff line, the Export Duty does not change. However, when the Reference Price crosses the boundary between tariff lines, the rate can rise in a discrete step, resulting in a much larger additional export burden than the change in the Export Levy over the same period.

5.4 Forecasts of Export Levy and Duty for Q4 2026

The integration of the Reference Price, Export Levy, and Export Duty shows that the total CPO export burden in Q4 2026 is at a relatively high level and tends to be stable after rising at the start of the quarter. In October 2026, the CPO Reference Price was set at USD 1,042.15/MT, with an Export Levy of USD 130.27/MT and an Export Duty of USD 178/MT, bringing the total Export Levy and Export Duty to USD 308.27/MT. This represents a fairly sharp increase from USD 273.94/MT in September 2026.

In November 2026, the CPO Reference Price is projected to rise to USD 1,058.68/MT, with an Export Levy of USD 132.34/MT and the Export Duty remaining at USD 178/MT, bringing the total Export Levy and Export Duty to an estimated USD 310.34/MT. In December 2026, the CPO Reference Price is projected at USD 1,065.74/MT, with an

Export Levy of USD 133.22/MT and the Export Duty remaining at USD 178/MT, bringing the total export burden to USD 311.22/MT.

Table 1. Total CPO Export Levy and Export Duty Forecast for Q4 2026 (USD/MT)

Period	Reference Price Forecast	Export Levy	Export Duty	Total Export Levy + Export Duty
September 2026	1,007.5	125.94	148 (Pos VIII)	273.94
October 2026	1,042.2	130.27	178 (Pos IX)	308.27
November 2026	1,058.7	132.34	178 (Pos IX)	310.34
December 2026	1,065.7	133.22	178 (Pos IX)	311.22

Sources: Minister of Trade Decree Number 1777 of 2026 (2026), Minister of Finance Regulation Number 68 of 2025 (2025), Minister of Finance Regulation Number 9 of 2026 (2026), and forecasted by IPOSS (2026b)

The change from September to October shows the different characteristics of the Export Levy and Export Duty. The CPO Reference Price rose by USD 34.64/MT, or about 3.4%, causing the Export Levy to rise proportionally by USD 4.33/MT. However, this increase in the Reference Price also moved CPO from Tariff Line VIII to Tariff Line IX, so that the Export Duty rose by USD 30/MT. As a result, the total Export Levy and Export Duty rose by USD 34.33/MT, or about 12.5%, a much larger percentage increase than that of the CPO Reference Price.

After entering Tariff Line IX in October, the increases in the CPO Reference Price projected for November and December no longer change the Export Duty, because the Reference Price remains within the same tariff line, ranging from over USD 1,030/MT to USD 1,080/MT. Thus, the total Export Levy and Export Duty rises only modestly, from USD 308.27/MT in October to USD 311.22/MT in December, mainly due to the increase in the Export Levy following the CPO Reference Price. The tariff line structure and Export Duty rates for CPO and its derivatives are set out in PMK No. 68 of 2025.

5.5 Export Levy and Export Duty Projections and Downstreaming Incentives

Although CPO is the main reference for tracking developments in the Export Levy and Export Duty, the impact of these two instruments on the palm oil industry cannot be adequately assessed from CPO alone. The applicable tariff structure covers a range of products, from raw materials and primary products to further processed products. Each product group has different Export Levy and Export Duty rates, so a change in the CPO Reference Price can result in a different export burden for each product.

This difference stems mainly from the design of the two instruments. Under PMK No. 9 of 2026, some products are subject to the Export Levy as a fixed nominal amount, while others are charged based on a percentage of the CPO Reference Price. CPO and a number of products in Group II are subject to an Export Levy of 12.5% of the CPO Reference Price, Group III products 12%, Group IV products 10%, and Group V products 7.25%.

At the same time, the Export Duty is set differently for each product type in each tariff line. Because the October CPO Reference Price and the projections for November and December all remain within **Tariff Line IX**, the Export Duty rate for each product is expected to remain unchanged throughout Q4. Changes in the total export burden during this period come mainly from changes in the Export Levy for products whose levy is calculated as a percentage of the CPO Reference Price.

To see the implications of these two instruments more fully, the Export Levy and Export Duty projections need to be viewed along the entire palm oil product chain. This comparison also shows how the tariff structure differentiates the export burden among CPO, fractionated products, refined products, packaged products, and biodiesel, as well as the implications for incentives for further domestic processing.

Table 2. Forecast of Export Levies (PE) and Export Duties (BK) on Palm Oil and Its Derivatives for Q4 2026 (USD/MT)

Products	HS Code	October			November			December		
		PE	BK	PE+BK	PE	BK	PE+BK	PE	BK	PE+BK
Fresh Fruit Bunch	1207.99.50	0	171	**171**	0	171	**171**	0	171	**171**
Palm Kernel	1207.10.10; 1207.10.30; 1207.10.90	25	151	**176**	25	151	**176**	25	151	**176**
Palm Kernel Meal	ex 2306.60.10; ex 2306.60.90	30	12	**42**	30	12	**42**	30	12	**42**
Empty Fruit Bunch	1404.90.92	15	21	**36**	15	21	**36**	15	21	**36**
Palm Kernel Shell	1404.90.91	5	10	**15**	5	10	**15**	5	10	**15**
Crude Palm Oil (CPO)	1511.10.00	130.27	178	**308.27**	132.34	178	**310.34**	133.22	178	**311.22**
Crude Palm Kernel Oil (CPKO)	1513.21.10	130.27	224	**354.27**	132.34	224	**356.34**	133.22	224	**357.22**
Palm Oil Mill Effluent Oil	ex 2306.60.90 ex 2306.90.90	130.27	178	**308.27**	132.34	178	**310.34**	133.22	178	**311.22**
High Acid Palm Oil Residue	ex 2306.60.90 ex 2306.90.90	130.27	178	**308.27**	132.34	178	**310.34**	133.22	**178**	**311.22**
Crude Palm Olein	1511.90.42; 1511.90.49	125.06	99	**224.06**	127.04	99	**226.04**	127.89	99	**226.89**
Crude Palm Stearin	1511.90.41	125.06	88	**213.06**	127.04	88	**215.04**	127.89	88	**215.89**
Crude Palm Kernel Olein	1513.29.13	125.06	124	**249.06**	127.04	124	**251.04**	127.89	124	**251.89**
Crude Palm Kernel Stearin	1513.29.11	125.06	124	**249.06**	127.04	124	**251.04**	127.89	124	**251.89**
PFAD	3823.19.20	125.06	81	**206.06**	127.04	81	**208.04**	127.89	81	**208.89**
PKFAD	3823.19.30	125.06	81	**206.06**	127.04	81	**208.04**	127.89	81	**208.89**
Split Fatty Acid CPO/CPKO/crude fractions	ex 3823.19.90	125.06	184	**309.06**	127.04	184	**311.04**	127.89	184	**311.89**
SPFAD	ex 3823.19.90	125.06	128	**253.06**	127.04	128	**255.04**	127.89	128	**255.89**

Products	HS Code	October			November			December		
		PE	BK	PE+BK	PE	BK	PE+BK	PE	BK	PE+BK
SPKFAD	ex 3823.19.90	125.06	241	**366.06**	127.04	241	**368.04**	127.89	241	**368.89**
RBD Palm Olein	1511.90.36; 1511.90.37; 1511.90.39.	104.22	104	**208.22**	105.87	104	**209.87**	106.57	104	**210.57**
RBD Palm Oil	1511.90.20	104.22	91	**195.22**	105.87	91	**196.87**	106.57	91	**197.57**
RBD Palm Stearin	1511.90.31; 1511.90.32.	104.22	84	**188.22**	105.87	84	**189.87**	106.57	84	**190.57**
RBD Palm Kernel Oil	1513.29.95	104.22	117	**221.22**	105.87	117	**222.87**	106.57	117	**223.57**
RBD Palm Kernel Olein	1513.29.94	104.22	105	**209.22**	105.87	105	**210.87**	106.57	105	**211.57**
RBD Palm Kernel Stearin	1513.29.91	104.22	139	**243.22**	105.87	139	**244.87**	106.57	139	**245.57**
RBD Palm Olein branded ≤25 kg	ex 1511.90.36	75.56	48	**123.56**	76.75	48	**124.75**	77.27	48	**125.27**
Biodiesel FAME	3826.00.21; 3826.00.22; ex 3826.00.90	75.56	37	**112.56**	76.75	37	**113.75**	77.27	37	**114.27**

Sources: Calculate based on Minister of Trade Decree Number 1777 of 2026 (2026), Minister of Finance Regulation Number 68 of 2025 (2025), Minister of Finance Regulation Number 9 of 2026 (2026), and IPOSS (2026b)[1]

The table shows that the Export Levy and Export Duty burden varies quite widely across products. In October 2026, for example, CPO faces a total Export Levy and Export Duty of USD 308.27/MT, while Crude Palm Olein faces USD 224.06/MT and RBD Palm Olein USD 208.22/MT. For branded packaged RBD Palm Olein with a net weight of no more than 25 kg, the total burden falls to USD 123.56/MT, while for biodiesel it is USD 112.56/MT.

These differences reflect a differentiation of the export burden according to product type and level of processing. In general, several further processed products face a lower combination of Export Levy

[1] Note: The October 2026 CPO Reference Price of USD 1,042.15/MT is the actual figure, while the Reference Prices for November (USD 1,058.68/MT) and December (USD 1,065.74/MT) are projections. All three fall within Export Duty Tariff Line IX.

and Export Duty than crude CPO. This structure is consistent with a tariff design that differentiates the export burden by product group, although the pattern of decline is not always linear because the Export Duty also differs for each product type.

From an industry perspective, this differentiation is important because the Export Levy and Export Duty not only determine the size of state revenue and plantation funds, but also affect relative prices and export netbacks across products. Differences in the burden among CPO, fractionated products, refined products, packaged products, and biodiesel can affect the economic incentive to carry out further processing before products are marketed abroad. The analysis of the Export Levy and Export Duty therefore needs to look not only at the size of the burden on CPO, but also at the tariff structure along the palm oil downstreaming chain.

In the context of Q4 2026, this structure operates alongside rising domestic CPO demand following the implementation of B50 and relatively limited stocks. High Export Levy and Export Duty on upstream products can limit the export netback, while the lower tariff structure on a number of downstream products provides a relative incentive for increasing domestic value added. At the same time, the Export Levy retains an important function as a source of financing for various strategic programs in the palm oil sector. Developments in the Export Levy and Export Duty therefore need to be viewed in a balanced way in terms of revenue, export competitiveness, price transmission, domestic market needs, and downstreaming incentives.

5.6 The Role of the Export Levy and Export Duty in Maintaining the Economic Balance of the Palm Oil Industry

The Export Levy and Export Duty can indeed be seen primarily as an additional burden on palm oil products marketed abroad. From a trade economics perspective, this view is quite relevant, because both instruments reduce the net value that can be obtained from exports and affect domestic price formation. However, viewing the

Export Levy and Export Duty solely as an export burden does not capture their full economic function. The two instruments have different objectives and mechanisms, and they interact with the structure of the domestic palm oil market.

The Export Duty is essentially a fiscal and trade instrument. Its tariff structure, which rises with the Reference Price, turns part of the benefit from high commodity prices into state revenue, while also influencing the relative incentives between exporting raw materials and exporting processed products. The differentiation of tariffs across products, as discussed in the previous section, also provides a relative incentive for increased domestic processing and value added.

The Export Levy, meanwhile, has a different dimension, because its revenue is channeled back to finance various palm oil industry development programs. These funds support, among other things, human resource development, research and development, promotion, plantation replanting, facilities and infrastructure, and the biodiesel program. Thus, the Export Levy operates not only on the export side, but is also part of a policy financing mechanism that influences domestic demand and the development of the palm oil industry.

This function becomes even more important in the context of the biodiesel program. The biodiesel program has created a large domestic market for palm oil and increased domestic CPO absorption. The scale of this absorption can also serve as a **demand buffer for the domestic CPO market**. When global CPO prices decline, pressure on the domestic market can be cushioned because part of production continues to be absorbed by biodiesel demand at prices that tend to be stable and do not depend entirely on the export market.

This mechanism is also supported by the system for setting the Biodiesel Index Price, which applies on a monthly basis and thus provides price certainty for biodiesel transactions during that period. In practice, when there is a gap between the Biodiesel Index Price

and the price of the diesel fuel used as its reference, funds sourced in part from the Export Levy are used to cover that gap. Thus, the Export Levy functions not only as a levy on exports, but also as one of the sources of financing that allows the biodiesel program to sustain CPO absorption in the domestic market.

From the perspective of the CPO market, this mechanism shows **two sides of the Export Levy's influence**. On the one hand, the Export Levy is part of the export burden that reduces the export netback. On the other hand, Export Levy revenue used to support the biodiesel program helps sustain large volumes of domestic CPO demand. In 2026, CPO consumption for biodiesel is projected to reach approximately **15.3 million MT**, or more than half of domestic palm oil consumption. The economic impact of the Export Levy therefore cannot be adequately assessed solely from the amount levied on each ton of exported product.

Within this framework, the proposal to abolish the Export Levy, which has been raised by some smallholder groups, particularly in the early period of the policy's implementation, also needs to be viewed from a broader perspective. Abolishing the Export Levy does not necessarily mean that the full value of the levy would be passed through as a higher price received by producers. The impact would depend heavily on how the programs that have been financed by the Export Levy, especially biodiesel, obtain alternative sources of financing. If abolishing the Export Levy reduces the capacity to finance the biodiesel program without adequate alternative funding, the program's capacity to sustain domestic CPO absorption could also be affected.

A large-scale decline in domestic absorption would ultimately increase the volume of CPO that has to be diverted to the export market. This additional supply may not be fully absorbed by global demand at the same price level, potentially putting pressure on CPO prices.

Thus, the relationship between the Export Levy and CPO prices works through **two opposing but interrelated mechanisms**: on the

one hand, the Export Levy adds to the export burden and depresses the export netback; on the other, it is a source of financing that helps sustain domestic demand through the biodiesel program. Evaluation of the Export Levy therefore needs to consider both sides simultaneously, rather than looking solely at the size of the levy on exports.



CHAPTER 6. PALM OIL'S CONTRIBUTION TO THE NATIONAL ECONOMY

The changing balance of the palm oil industry in 2026 has implications not only for production, domestic consumption, exports, and prices, but also for its contribution to Indonesia's economy. Increased domestic absorption, particularly through the B50 mandate, is shifting part of the economic value that was previously realized mainly through exports toward the domestic economy, through energy import substitution, CPO processing, and value creation. At the same time, exports continue to play an important role as a source of foreign exchange and a support for the trade balance. This chapter discusses these changes to examine how the new equilibrium between the domestic market and exports affects palm oil's contribution to Indonesia's economy.

6.1 Palm Oil's Contribution to the Trade Balance

Indonesia's trade balance performance is determined not only by the ability of exports to generate earnings from abroad, but also by the size of the import bill that must be financed. Within this structure, palm oil holds an important position as one of the largest sources of non-oil and gas exports, while Indonesia continues to face pressure from its oil and gas trade deficit. As foreign exchange needs for energy rise, the ability of the non-oil and gas sector to generate a surplus becomes increasingly important for maintaining the trade balance.

This role is reflected in the value of exports of palm oil products and derivatives, which reached USD 18.60 billion in 2015, rose to USD 37.07 billion in 2025, and had reached USD 19.45 billion in the first half of 2026. The size of this value shows that palm oil not only generates large export earnings, but is also one of the main sources of external earnings that can offset pressure from the import side.

Table 3. Palm Oil's Contribution to Indonesia's Trade Balance, 2015 to the First Half of 2026

Description (in billion USD)	2015	2020	2022	2024	2025	2026 Jan-Jun
Total Value of Exports of Palm Oil and Its Derivatives	18.60	23.00	39.01	28.33	37.07	19.45
Savings on Diesel Imports from the Biodiesel Mandate	0.29	2.64	8.34	7.86	8.08	4.24
Total Contribution of Palm Oil	**18.89**	**25.64**	**47.35**	**36.19**	**45.15**	**23.69**
Indonesia's Oil and Gas Trade Balance						
Without Mandatory Biodiesel Contributions	-6.19	-8.64	-32.73	-28.26	-27.78	-20.01
With Mandatory Biodiesel Contributions	-5.90	-6.00	-24.39	-20.40	-19.70	-15.77
Indonesia's Non-Oil and Gas Trade Balance						
Without Contribution from Exports of Palm Oil and Its Derivatives	-5.00	4.70	39.84	23.11	23.68	-0.11
With Contribution from Exports of Palm Oil and Its Derivatives	13.60	27.70	78.85	51.44	60.75	19.34
Indonesia's Trade Balance						
Without the Contribution of Palm Oil	-11.19	-3.94	7.11	-5.15	-4.10	-20.12
With the Contribution of Palm Oil	7.70	21.70	54.46	31.04	41.05	3.57

Sources: Statistics Indonesia (2026b, 2026a), Ministry of Energy and Mineral Resources (2026), PASPI (2026), analysed by IPOSS

The importance of this role becomes clearer through a counterfactual approach. In the first half of 2026, the non-oil and gas trade balance recorded a surplus of USD 19.34 billion. If the USD 19.45 billion in exports of palm oil and its derivatives were excluded from the calculation, this position would turn into a deficit of approximately USD 110 million. This means that without palm oil product exports, the non-oil and gas surplus that serves as a buffer for the trade balance would practically not exist. In 2025, the non-oil and gas surplus of USD 60.75 billion would fall to approximately USD 23.68 billion if exports of palm oil products and derivatives were excluded. This shows that palm oil is not merely one of the commodities with large export value, but carries real weight in Indonesia’s capacity to generate a trade surplus.

This significance grows when placed in the context of the oil and gas deficit. The oil and gas trade balance recorded a deficit of USD 19.70 billion in 2025 and USD 15.77 billion in the first half of 2026. This means that the non-oil and gas surplus has to cover most of the pressure arising from energy import needs. In such a situation, every source of non-oil and gas surplus becomes strategic, and the size of palm oil exports provides an important buffer for the trade balance as a whole.

At the same time, the use of palm oil for biodiesel provides benefits from a different angle. In 2025, the biodiesel mandate is estimated to have saved approximately USD 8.08 billion in diesel imports, while in the first half of 2026 the savings reached approximately USD 4.24 billion. This value does not appear as additional exports, but as foreign exchange that does not need to be spent on buying diesel from abroad. Palm oil's benefit to the trade balance therefore does not stop at its ability to generate export earnings. Part of the CPO used domestically also helps reduce energy import needs and contain pressure from the oil and gas deficit.

These two mechanisms show the importance of palm oil to the trade balance from different angles. Exports of palm oil and its derivatives provide earnings from international markets, while the use of CPO for biodiesel helps reduce foreign exchange spending on energy imports. With the oil and gas deficit still large, both channels are becoming increasingly relevant to the resilience of Indonesia's trade balance.

Palm oil's strategic position is also evident when compared with other major export commodities. The structure of Indonesia's export commodities has changed considerably over the past nine years. In 2017, the top three positions were still held by palm oil at USD 20.34 billion, coal at USD 17.88 billion, and natural gas at USD 7.99 billion. In 2025, the ranking changed to iron and steel at USD 28.65 billion, palm oil at USD 27.05 billion, and coal at USD 24.48 billion. The most striking change was in iron and steel, which moved from tenth place in 2017 to first place in 2025, while nickel rose to fifth place. This

development shows the growing role of processed mineral products in Indonesia's export structure, in line with the expansion of downstreaming over the past few years. The rise of the iron and steel group is also closely linked to the development of nickel downstreaming, including through the production of ferronickel, which under the HS classification falls within the ferro-alloy group in Chapter 72 (Iron and Steel).

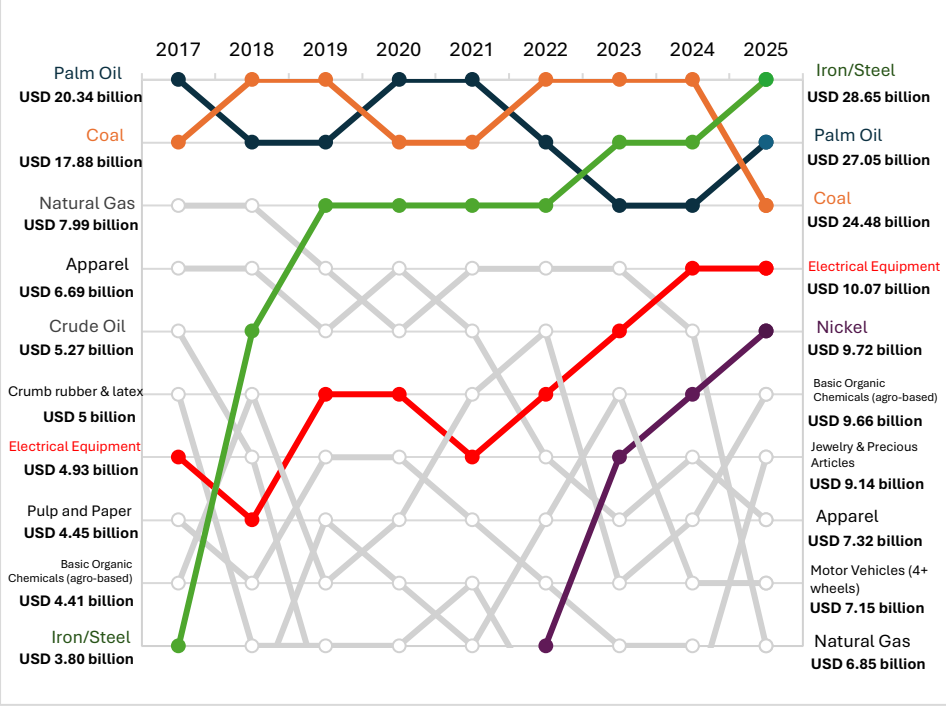


Figure 21. Shifts in the Ranking of Indonesia's Major Export Commodities, 2017–2025[2]
Source: Bank Indonesia (2026) analysed by IPOSS

Amid these changes, palm oil has shown a relatively consistent position. Throughout 2017–2025, palm oil was always among Indonesia's top three export commodities. Its value rose from USD 20.34 billion in 2017 to USD 27.05 billion in 2025. Thus, palm oil's shift from first to second place in 2025 does not reflect a decline in export

[2] Note: The palm oil commodity group covers CPO, crude palm kernel oil (CPKO), and their processed products and fractions, and does not include oleochemical products.

value, but rather the emergence of new export sources that grew faster, especially iron and steel. In fact, in 2025 the gap between the export values of palm oil and iron and steel was only about USD 1.6 billion. This shows that amid the transformation of the national export structure, palm oil has remained one of the main anchors of Indonesia's export earnings.

Interestingly, this change in composition has not significantly altered the concentration of exports among the top group. The three largest commodities accounted for about 27.4% of Indonesia's total exports in 2017, while in 2025 their share was about 28.3%. This means that Indonesia's export structure has indeed undergone a transformation, but more in the form of a replacement and strengthening of its leading commodities than a fully broader distribution of exports. Whereas in 2017 the top group was dominated by palm oil, coal, and natural gas, in 2025 iron and steel emerged as the new leader, while palm oil and coal remained in the top three.

6.2 The B50 Program and the Challenge of Maintaining Room for Palm Oil Exports

The implementation of the B50 mandate increases CPO absorption in the domestic market and strengthens palm oil's role in supporting national energy security. However, the greater use of CPO for biodiesel also changes the balance between domestic demand and exports. With palm oil production not growing at the same pace as domestic demand, the room for exports increasingly depends on the industry's ability to increase production.

This linkage is all the more important because exports not only generate foreign exchange, but are also one of the revenue bases for the Export Levy, which is used to finance various palm oil industry development programs, including financing support for the biodiesel program. There is thus a relationship between production, domestic absorption for biodiesel, export volume, and program financing capacity. An increase in domestic absorption that is not matched by

production growth can reduce the room for exports and ultimately narrow the Export Levy revenue base.

To illustrate this relationship, the following analysis uses an **illustrative simulation**, not a projection of actual BPDP revenue. The simulation uses a 2026 palm oil export volume of 25.76 million MT and, to simplify the calculation, assumes that the entire export volume is equivalent to CPO exports subject to an average Export Levy of USD 130/MT. This assumption is deliberately used as a benchmark so that the relationship between changes in biodiesel financing needs, the room for exports, and production requirements can be seen in a simple way.

In practice, Indonesia's palm oil exports consist of CPO and various derivative products with different Export Levy rates, as discussed in Chapter 5. The results of this simulation are therefore not intended as an estimate of actual Export Levy revenue, but as a sensitivity illustration to see how far changes in biodiesel financing needs can affect the need to maintain room for exports and increase production.

Assuming a B50 biodiesel volume **of 19.5 million kL per year**, biodiesel financing needs are calculated based on the gap between the Biodiesel Index Price and the Diesel Index Price. The larger the gap between these two prices, the greater the funding needed to maintain the economic viability of the biodiesel program. In addition to these needs, the simulation also accounts for approximately **Rp4 trillion** for other BPDP programs.

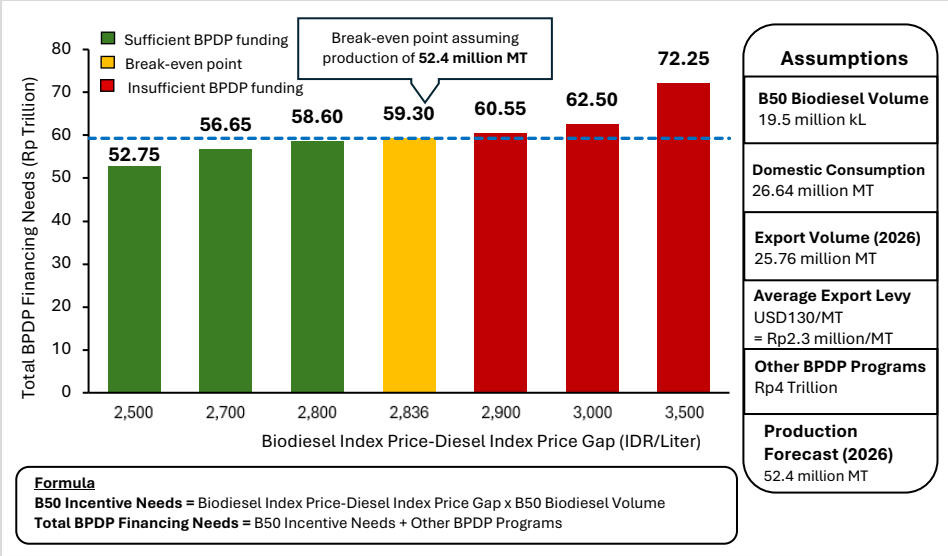


Figure 22. Simulation of Total BPDP Financing Needs at Various Biodiesel Index Price–Diesel Index Price Gaps
Source: IPOSS (2026a), analysed

In this simulation, the Biodiesel Index Price –Diesel Index Price gap is used as a sensitivity variable to observe changes in the financing needs of the biodiesel program. The larger the gap between these two prices, the greater the financing required to maintain the economic viability of biodiesel. Within the assumptions used in the simulation, the illustrative financing capacity under 2026 production and export conditions is estimated at approximately Rp59.3 trillion per year. This level corresponds to a Biodiesel Index Price–Diesel Index Price gap of approximately Rp2,836/liter.

This figure is not intended as an estimate of actual BPDP revenue, but as a break-even calculation within the simulation scenario. At this point, the financing needs for biodiesel and other BPDP programs equal the financing capacity calculated on the assumption of an export volume of 25.76 million MT and an average Export Levy of USD 130/MT, with the entire export volume simply assumed to be equivalent to CPO exports.

If the Biodiesel Index Price–Diesel Index Price gap is below Rp2,836/liter, the financing needs in the simulation remain below this

financing capacity. Conversely, if the index price gap rises beyond the break-even point, financing needs grow faster than the capacity available at the reference export volume. This shows that the sustainability of B50 financing will become increasingly sensitive to changes in the price gap between biodiesel and diesel when production and the room for exports do not increase.

A further implication can be seen on the production side. If the additional financing needs are assumed to continue to be sourced from the Export Levy, the increase in funding needs must be supported by a larger export base. With domestic consumption already determined by food, oleochemical, and biodiesel needs, this additional room for exports ultimately requires additional production. This relationship is illustrated in Figure 23.

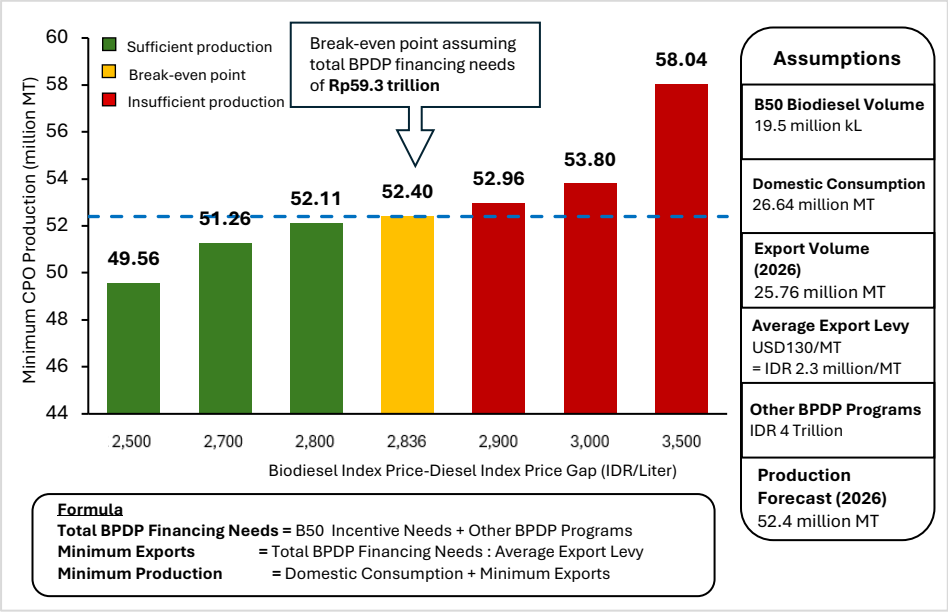


Figure 23. Simulation of Minimum CPO Production at Various Biodiesel Index Price–Diesel Index Price Gaps
Source: IPOSS (2026a), analysed

In this simulation, the financing needs in each index price gap scenario are translated into a **minimum equivalent export volume** based on the assumption of an average Export Levy of USD 130/MT.

This volume is then added to domestic demand to obtain the minimum production requirement. The production figures in Figure 23 are therefore not projections of national production, but an illustration of the level of production required to meet each scenario if financing needs are assumed to be supported by the Export Levy, using the same assumption structure as in Figure 22.

The simulation results show that production requirements rise as the Biodiesel Index Price–Diesel Index Price gap widens. At a gap of **IDR 2,500/liter**, the production requirement in the simulation is approximately **49.6 million MT**. This rises to approximately 51.3 million MT at a gap of IDR 2,700/liter and 52.1 million MT at a gap of IDR 2,800/liter. At the break-even point of approximately IDR 2,836/liter, the production requirement reaches approximately 52.4 million MT, roughly equal to the projected national palm oil production for 2026.

Beyond this point, the production requirement in the simulation begins to exceed projected 2026 production. At an index price gap of IDR 2,900/liter, the production requirement rises to approximately 53.0 million MT, and at IDR 3,000/liter to approximately 53.8 million MT. If the index price gap widens to Rp3,500/liter, the production requirement reaches approximately 58.0 million MT per year, about 5.6 million MT higher than the projected 2026 production of 52.4 million MT.

These results do not mean that national production must reach 58 million MT when the index price gap is IDR 3,500/liter. This figure is a **consequence** of the simulation's assumption that **all additional financing needs are met through additional Export Levy revenue**, under the rate and export structure assumptions used in the simulation. In practice, financing needs may be affected by the export structure and Export Levy rates across products, available fund balances, changes in energy prices, policy adjustments, and other sources of financing. Figure 23 is therefore more appropriately read as a **sensitivity indicator** showing how B50 financing pressure

can become increasingly linked to the need to maintain room for exports when production growth is limited.

Although illustrative, the simulation reveals an important structural issue. When domestic consumption rises while production is relatively limited, the room for exports becomes increasingly narrow. At the same time, if the Export Levy remains one of the sources of financing for the biodiesel program, the narrowing of the room for exports may also shrink the revenue base supporting the program. **Increased production thus serves two functions at once: providing supply to meet growing domestic demand, and maintaining the room for exports as a source of foreign exchange and as the Export Levy revenue base.**

In the medium term, this strengthens the importance of higher productivity as one of the foundations for the sustainability of B50. Additional production increasingly needs to come from higher yields on existing land through replanting, the use of superior planting material, improved cultivation practices, and higher productivity on smallholder plantations, without relying on the expansion of new land. The role of the PSR in building this additional production capacity is discussed in more detail in Chapter 7.

6.3 The Mandatory B50 Program and Domestic Economic Value Creation

Increased CPO absorption for biodiesel can indeed narrow the room available for exports if it is not matched by production growth. However, lower exports do not mean that all the economic value of the CPO redirected to the domestic market is lost. When CPO is processed into biodiesel domestically, part of the value creation shifts from external transactions to domestic economic activity through processing, value added generation, employment, and investment in industrial capacity. With CPO demand for biodiesel at around 17 million MT per year under B50, this increase in domestic absorption expands the role of the biodiesel industry in the national palm oil value chain.

The economic impact of greater domestic CPO processing is reflected in value added generation and employment. The Ministry of Energy and Mineral Resources (Kementerian Energi dan Sumber Daya Mineral, ESDM) projects that the value added from CPO processed into biodiesel will rise from Rp20.92 trillion under B40 to Rp23.49 trillion under B50. At the same time, employment associated with the biodiesel program is projected to increase from around 1.8 million people under B40 to 2.1 million people under B50. Thus, the additional CPO absorbed for biodiesel not only increases feedstock demand, but also expands the economic activity taking place along the domestic production chain.

This impact is also visible in the formation of industrial capacity. The experience of implementing B40 in 2025 shows that higher blending mandates have also been followed by increased investment in the biodiesel industry. In that year, two biofuel business entities (Badan Usaha Bahan Bakar Nabati, BU BBN) built new biodiesel plants (PT Selago Makmur Plantation and PT Wahana Prima Sejati) and two expanded their capacity (PT Eco Prima Energi and PT Energi Unggul Persada), with a combined additional capacity from the four BU BBN of 2.86 million kL/year and total investment of approximately Rp2.37 trillion. The addition of these four BU BBN, whose business licenses have been issued, raised the total production capacity of Indonesia's biodiesel plants to 22.02 million kL/year (Ministry of Energy and Mineral Resources, 2025). This additional capacity is equivalent to an increase of about 15% compared with the capacity before the four projects came on stream. This development shows that higher biodiesel mandates not only increase the utilization of existing production capacity, but also drive investment and the formation of new production capacity.



Million kL	2020	2021	2022	2023	2024	2025	2026
Installed capacity (active)	11.62	15.46	17.56	18.68	19.15	19.15	22.02

Figure 24. Distribution of Biodiesel Plants and Development of Indonesia's Installed Biodiesel Capacity, 2020–2026
Source: Ministry of Energy and Mineral Resources (2026)

This investment has two dimensions of value creation. First, it builds productive assets in the form of additional capacity that can be used repeatedly to meet biodiesel demand in subsequent periods. Second, the process of building this capacity itself creates intersectoral demand. The construction and expansion of plants require construction work, machinery and equipment, installation, metal products, engineering services, transportation, warehousing, and various business services. The Rp2.37 trillion therefore represents not only asset formation in the biodiesel industry, but also an investment shock that stimulates production activity in supplier sectors.

Using an output multiplier of 1.82 for the construction sector as an approximation based on Indonesia's Input-Output Table, the investment of Rp2.37 trillion is illustratively associated with approximately Rp4.31 trillion in total economic output (Pitaloka et al., 2020). This means that, after accounting for the initial investment and its linkages with supplier sectors, there is approximately Rp1.94 trillion in additional output beyond the value of the initial investment. This additional output is associated with increased production activity in the supporting sectors needed to build and expand

biodiesel capacity, including construction, machinery and equipment, metal products, installation, engineering services, transportation, warehousing, and business services. In other words, investment in the biodiesel industry also creates economic activity in other sectors connected along its supply chain.

Ultimately, increased CPO absorption through B50 not only changes the composition between domestic consumption and exports, but also changes where the economic value of palm oil is realized. Part of the CPO redirected from the export market continues to generate economic activity when processed domestically, through various linkages along the production chain. The challenge ahead is therefore not a choice between meeting domestic demand and maintaining exports, but increasing production and productivity so that both can grow together. This increase in production needs to be achieved through higher productivity on existing land, so that additional supply does not depend on the expansion of plantation area. In this way, domestic biodiesel demand and the room for exports can both be maintained, in line with efforts to strengthen the sustainability of the palm oil industry.

6.4 Outlook for the B50 Biodiesel Program in Q4 2026

The discussion of the outlook for the B50 biodiesel program is important in the context of the sustainability of Indonesia's mandatory biodiesel policy. One of the key indicators of this sustainability is the ability of the Plantation Fund Management Agency (BPDP) to finance the price gap between biodiesel and diesel fuel. This price gap reflects the amount of incentives that must be disbursed to keep biodiesel competitive in the domestic market. Entering the second quarter of full B50 implementation, an analysis of the potential financing burden on BPDP in Q4 2026 is crucial for assessing whether the palm oil fund still has adequate capacity to support the program sustainably.

The outlook for the B50 biodiesel program's burden in Q4 2026 needs to be assessed by comparing the Biodiesel Market Price Index and

the Diesel Index Price. Under the mandatory biodiesel scheme, the gap between the Biodiesel Index Price and the Diesel Index Price serves as the basis for calculating the price gap payments covered by the palm oil fund. The larger the gap between the Biodiesel Index Price and the Diesel Index Price, the greater the financing that must be provided. Conversely, if the Diesel Index Price rises and approaches or even exceeds the Biodiesel Index Price, the price gap payments become smaller or disappear entirely.

Methodologically, the Biodiesel Index Price is calculated using the biofuel market price index formula set by the Ministry of Energy and Mineral Resources (ESDM): the average KPBN CPO price from the 25th of the month two months earlier to the 24th of the preceding month, plus a conversion cost of USD 85/MT converted at the Bank Indonesia middle exchange rate, then multiplied by a conversion factor of 0.87 kg of CPO per liter. This formula was tested against 37 months of official ESDM releases since August 2023 and produced an average deviation of less than IDR 30/liter, so the Biodiesel Index Price projection depends practically only on the KPBN CPO price and exchange rate projections. The KPBN price itself is derived from the MDEX price projections in Chapter 4 through the KPBN–MDEX price spread, which since June 2026 has been stable at around USD 243/MT below the Malaysian price.

Meanwhile, the Diesel Index Price is calculated based on MOPS or Argus published prices for Gas Oil with 0.25 percent sulfur, which in this projection is modeled from the Brent crude oil price over the same reference period plus the gas oil–crude oil price spread, then converted to rupiah per liter at the Bank Indonesia middle exchange rate. Daily Brent prices refer to EIA publications up to September 17, 2026; for the period thereafter, Brent is assumed to ease gradually from its latest price of USD 121/bbl toward USD 90/bbl by the end of December 2026, the level at which the EIA projection for the second half of 2026 and the S&P Global projection for the rest of the year converge. The gas oil–Brent spread refers to the three-month average of USD 43/bbl, well above the normal range of USD 15–25/bbl due to tight global distillate markets. Thus, the projected B50

burden in Q4 2026 is influenced not only by the price of CPO as the biodiesel feedstock, but above all by the dynamics of fossil energy prices.

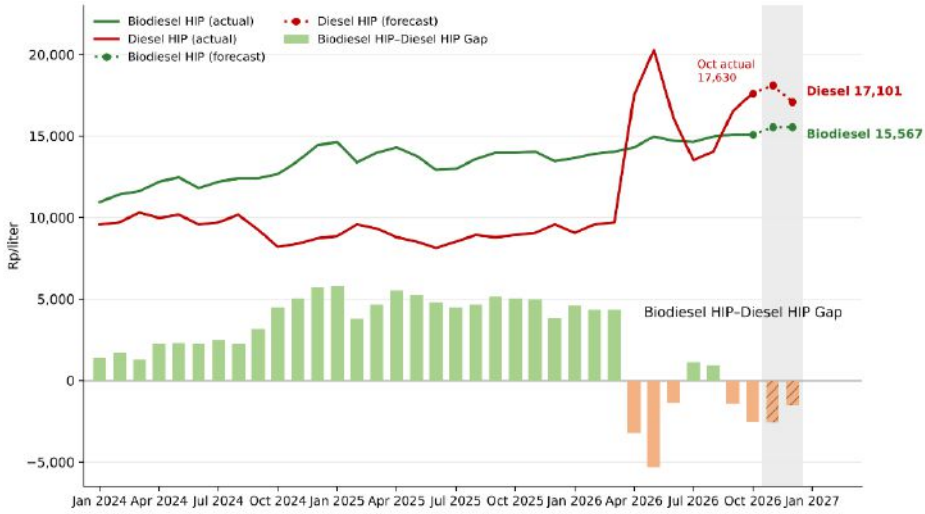


Figure 25. Biodiesel Index Price, Diesel Index Price, and Incentive Gap for Q4 2026
Source: Analysis by IPOSS (2026a) based on ESDM, BPDP, CPO KPBN, JISDOR, and EIA data

Crude oil price developments in September 2026 fundamentally changed the picture for Q4. Brent, which was still around USD 88/bbl at the end of August, surged to USD 130/bbl on September 15 as disruptions to oil flows from the Middle East failed to ease, and stayed above USD 120/bbl through the middle of the month. Because the reference period for the October index price ends on September 24, this surge feeds directly into the October Diesel Index Price, and because the November reference period ends on October 24, its impact will persist at least until the November index price.

Based on the projection results, the Diesel Index Price stays above the Biodiesel Index Price throughout Q4 2026. In October 2026, the Diesel Index Price is projected at Rp17,630/liter, with an average Brent price of USD 109.6/bbl in the reference period, while the Biodiesel Index Price is estimated at IDR 15,072/liter, calculated from actual KPBN prices for most of the reference period. The gap is negative at approximately IDR 2,558/liter, so the incentive

requirement is zero. In November 2026, the Diesel Index Price peaks at IDR 17,538/liter because its reference period covers the highest Brent prices in late September and early October, with a negative gap of IDR 2,079/liter against a Biodiesel Index Price of IDR 15,459/liter. In December 2026, as Brent prices are assumed to ease to around USD 106/bbl in the reference period, the Diesel Index Price falls to IDR 16,543/liter, but remains IDR 975/liter above the Biodiesel Index Price of IDR 15,568/liter.

Table 4. Projections for Biodiesel Index Price, Diesel Index Price, and Incentives for Q4 2026

Month	Brent (USD/bbl)	Diesel Index Price (IDR/L)	Biodiesel Index Price (IDR/L)	Gap Between Biodiesel Index Price and Diesel Index Price (IDR/L)	Incentives (IDR/L)
October 2026	109.6	17,630	15,072	-2,558	0
November 2026	114.5	17,538	15,459	-2,079	0
December 2026	105.6	16,543	15,568	-975	0

Source: Analysis by IPOSS

Assuming a government-financed biodiesel volume of 4.9 million kL in Q4 2026, the same as the Q3 assumption, the price gap financing requirement is calculated by multiplying the biodiesel volume by the incentive per liter. If this volume is distributed evenly over three months, the financed volume per month is approximately 1.63 million kL, or 1.63 billion liters. Because the incentive per liter is zero in all three months, the price gap payment requirement in Q4 2026 is estimated at zero, compared with the Q3 projection of IDR 3.44 trillion and the slightly positive actual gaps in July and August 2026.

Table 5. Simulation of B50 Biodiesel Financing Costs for Q4 2026

Month	Volume of Subsidized Biodiesel (Million kL)	Incentives (IDR/L)	Estimated Financing Burden (IDR)
October 2026	1.63	0	0 trilion
November 2026	1.63	0	0 trilion
December 2026	1.63	0	0 trilion
Total Q4 2026	**4.90**	**0**	**0 trilion**

Source: Analysis by IPOSS

This simulation shows that the B50 program's burden in Q4 2026 is at its lowest point since the biodiesel mandate was expanded. This results from a combination of two factors that rarely occur together: crude oil prices surging above USD 100/bbl due to supply disruptions from the Middle East, and the gas oil–crude oil spread widening to twice its normal level due to tight global distillate markets. These two factors pushed the Diesel Index Price Rp1,000 to 2,000/liter above the Biodiesel Index Price, temporarily making biodiesel a cheaper fuel than diesel.

However, this does not mean that the B50 financing risk has disappeared, as it is heavily influenced by fossil fuel price dynamics that can change rapidly. Based on the sensitivity analysis in Table 6, if Brent falls to USD 80/bbl by the end of November, in line with J.P. Morgan and Goldman Sachs projections for the fourth quarter, an incentive requirement is expected to re-emerge in December at around Rp600/liter, with financing needs of approximately Rp1 trillion. In a sharper correction scenario down to USD 70/bbl, for example if disruptions in the Strait of Hormuz ease faster than expected, the December price gap could widen, raising the incentive requirement to around Rp1,400/liter, with financing needs reaching approximately Rp2.3 trillion. Assuming the gas oil spread remains at USD 43/bbl, the break-even point at which the Diesel Index Price equals the December Biodiesel Index Price is estimated at a Brent price of around USD 97/bbl for the October 25–November 24 reference period.

Table 6. Sensitivity of Q4 2026 Incentives to Brent Price Paths

Brent Price Scenario (USD/bbl)	Incentive (Oct) (IDR/L)	Incentive (Nov) (IDR/L)	Incentive (Des) (IDR/L)	Q4 Burden (IDR trilion)
Baseline: easing to USD 90/bbl by end-December	0	0	0	0
Holding steady at USD 121/bbl through the quarter.	0	0	0	0
Rapid decline to USD 80/bbl by end-November	0	0	596	0.97
Sharp correction to USD 70/bbl by end-November	0	0	1,399	2.29

Source: Analysis by IPOSS

From a strategic perspective, Q4 2026 presents an unusual combination that is more extreme than in Q3. On the one hand, the CPO Reference Price, Export Levy, and Export Duty are at their highest levels since the current tariff structure came into force, so palm oil fund revenue per ton exported increases. On the other hand, the biodiesel incentive burden is projected at zero because the Diesel Index Price has surged well above the Biodiesel Index Price. This provides very ample fiscal room for managing the palm oil fund in Q4 2026, which should be used to strengthen reserves in preparation for a period when crude oil prices fall again and the gap between the Biodiesel Index Price and the Diesel Index Price reopens, which, according to the consensus of international institutions, could happen as early as early 2027.

Overall, the outlook for the B50 program's burden in Q4 2026 shows that financing needs are determined not only by the volume of biodiesel distributed, but also by the dynamics of the price gap between biodiesel and diesel. With a financed volume of approximately 4.9 million kL, every Rp100/liter change in the index price gap changes funding needs by approximately Rp490 billion for one quarter. Because in Q4 2026 the direction of this gap is

determined by crude oil prices rather than CPO prices, the management of the B50 program needs to monitor simultaneously developments in crude oil and gas oil prices, the rupiah exchange rate, CPO prices, biodiesel volume, and the capacity of the palm oil fund sourced from the Export Levy.

6.5 The Challenges of Implementing B50 and the Transformation of Palm Oil's Role in Energy Security

The implementation of B50 since July 2026 has changed the structure of domestic CPO use. The additional demand of about 1.7 million MT of CPO to support the higher biodiesel blend increases the share of domestic consumption in the national palm oil balance (IPOSS, 2026a). Entering Q4 2026, the second quarter of full implementation, the allocation of CPO among energy, food, oleochemicals, exports, and stocks needs to be read more carefully, because pressures that were still only estimates in Q3 are now beginning to appear in the data.

Attention to B50 is becoming more important because it is being implemented as the balance tightens. The Reference Price, which has stayed above USD 1,000/MT since July and is projected to exceed USD 1,030/MT in Q4, reflects increasingly limited supply available for export. Under these conditions, the additional biodiesel demand must be met while the room for exports and stocks is narrowing, and production in the second half of the year is still overshadowed by a correction due to dry conditions.

Pressure on the room for exports matters because export volume affects Export Levy revenue. When the volume available for export declines, the revenue room to support palm oil programs also narrows, even though the Export Levy rate per ton is at a high level. At the same time, the zero B50 incentive burden in Q4 2026 is not a condition that can be relied upon, because it depends entirely on fossil energy prices, which are beyond the control of palm oil policy. Thus, the B50 issue does not stop at CPO sufficiency, but also

concerns the ability to maintain the room for exports as one of the pillars of BPDP program funding.

In this context, productivity is key. Additional CPO demand for biodiesel cannot continually be met by reducing the room for exports or drawing down ending stocks. Supply needs to increase so that domestic energy needs continue to be met while exports still have enough room to sustain Export Levy revenue. The oil palm replanting program for smallholders (PSR), the use of superior seeds, improved cultivation practices, and assistance to smallholders are the main pathways to raising production without expanding plantation area.

The simulation of the gap between the Biodiesel Index Price and the Diesel Index Price in section 6.4 shows how resilient B50 is to price changes. When the gap widens, price gap payment needs increase and the need for support from the Export Levy grows. When diesel prices exceed the Biodiesel Index Price, as in Q4 2026, the pressure of price gap payments disappears, although other risks such as logistics costs and energy inflation still need attention. In this way, the simulation not only reads incentive needs, but also shows the relationship between energy prices, CPO supply, the room for exports, and the resilience of program funding.

The impact on smallholders also needs attention. Higher domestic absorption can sustain CPO demand, but its benefits at the upstream level depend on price transmission, plantation productivity, smallholders' access to formal supply chains, and the continuity of support programs. If supply tightens and incentive costs rise again, the impact on FFB prices and the position of smallholders needs to be read carefully. The measure of B50's success needs to include price stability and the position of smallholders, in addition to the actual distribution of biodiesel itself.

Policy options need to be prepared in case CPO supply or biodiesel financing comes under pressure. The first option is to adjust the biodiesel blend to feedstock availability, so that B50 implementation continues to follow the capacity of CPO supply, stocks, and the room

for exports, drawing on Thailand's practice of adjusting its biodiesel blend according to supply conditions, palm oil stocks, and biofuel costs (USDA, 2024). The second option is to regulate the volume of biodiesel eligible for incentives, especially when the price gap between biodiesel and diesel widens again and payment needs rise. The third option is to use the fiscal room in Q4 2026, when incentive needs are zero and Export Levy revenue per ton is high, to strengthen palm oil fund reserves as a buffer for when crude oil prices fall again. All three options still need to be accompanied by accelerated upstream productivity through the PSR, superior seeds, improved cultivation, and assistance to smallholders.

The outlook for B50 in Q4 2026 and early 2027 will be largely determined by the balance between energy demand and national CPO supply capacity, as well as by the direction of global energy prices, which are currently masking the program's true cost. Policy focus needs to be directed at regular monitoring of the CPO balance, accelerating productivity through the PSR, strengthening biodiesel financing reserves while fiscal room remains ample, and managing risks to the room for exports and prices. B50 can strengthen energy security, as long as its implementation continues to maintain a balance between supply, exports, financing, and the position of smallholders.



CHAPTER 7. OUTLOOK ON THE CONTRIBUTION OF THE OIL PALM REPLANTING PROGRAM FOR SMALLHOLDERS (PSR) TO NATIONAL ENERGY SECURITY

The increase in domestic palm oil demand, particularly to support the implementation of the B50 mandate, makes the ability to increase production increasingly important for maintaining a balance between domestic demand, exports, and stocks. In the long term, additional supply cannot continue to rely on area expansion, so raising the productivity of existing plantations is becoming an increasingly strategic source of production growth.

In this context, the PSR Program plays an important role in improving productivity by replacing old palms and other low-productivity stands with new plantings that have higher yield potential. After nearly a decade of implementation since its launch in 2017, some of the replanted areas have reached the productive stage and begun contributing to national CPO production. This chapter assesses the progress of PSR implementation through 2026, estimates its contribution to national CPO production, and examines its role as a driver of national palm oil production growth, while identifying strategic directions for accelerating the program in 2027 and beyond.

7.1 PSR Progress, 2017–2026: Acceleration Remains Constrained

The Oil Palm Replanting Program for Smallholders (PSR) is one of the strategic instruments for raising the productivity of smallholder plantations by replacing old and unproductive palms with higher-quality planting material (BPDP, 2024; Directorate General of Plantations, 2024). In addition to improving smallholder plantation productivity, accelerating the PSR is also an important part of sustaining the national palm oil supply without relying on the expansion of new areas.

Since its launch in 2017, the PSR has shown positive progress in terms of program coverage. Based on Ministry of Agriculture data, the cumulative PSR area increased gradually from around 27 thousand

hectares in 2017 to around 441 thousand hectares as of September 2026 (Ministry of Agriculture, 2026). The largest increases occurred in the early period of the program, before growth in the replanted area became more moderate in subsequent years.

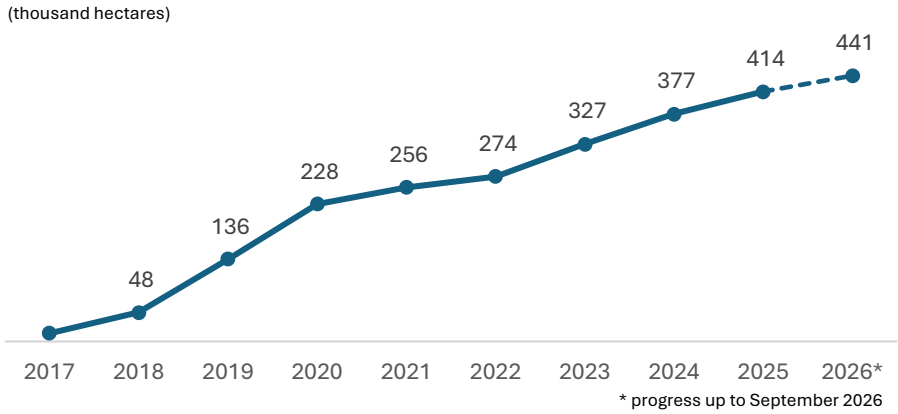


Figure 26. Cumulative PSR Performance, 2017–2026
Source: Ministry of Agriculture (2026), analysed by IPOSS

These achievements show that the PSR has built a foundation for implementing smallholder oil palm replanting nationwide. However, the program's cumulative area needs to be seen in the context of replanting needs that continue to grow as more smallholder palms reach old age and decline in productivity. The challenge for the PSR is therefore no longer only to expand program coverage, but to increase the pace of replanting so that it can keep up with the growing area of palms requiring replanting.

In 2026, the government set a PSR target of **50,000 hectares** spread across 21 provinces. As of August 2026, technical recommendations had been issued for **26,324 hectares**, involving 179 smallholder institutions and 12,819 smallholders (Ministry of Agriculture, 2026). Regionally, Riau recorded technical recommendations for 7,945 hectares, or 119% of its target of 6,650 hectares. Relatively large contributions also came from Aceh with 5,594 hectares, Jambi with 3,829 hectares, and North Sumatra with 3,026 hectares.

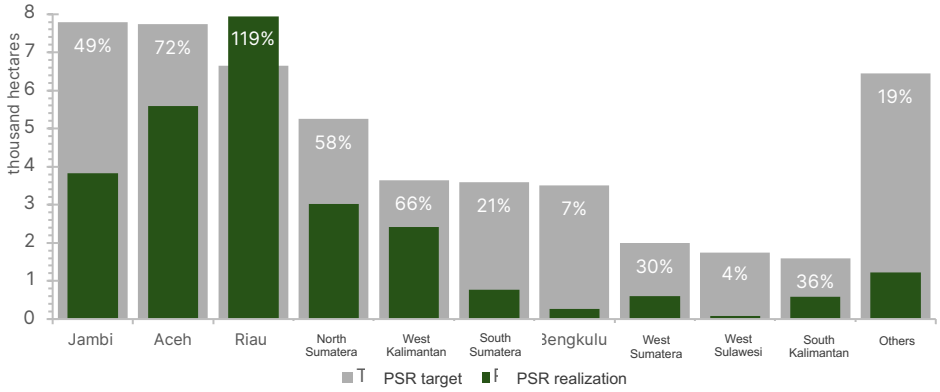


Figure 27. PSR Targets and Realization in 2026
Source: Ministry of Agriculture (2026), analysed by IPOSS

Differences in achievement across regions show that the readiness of smallholder institutions, the completeness of administrative documents, and the effectiveness of the verification process remain important factors in shaping the PSR pipeline. In addition, technical recommendations are an intermediate indicator and do not yet reflect actual planting. Evaluation of PSR success therefore needs to go beyond the area covered by technical recommendations or approved under the program, toward actual planting and, ultimately, the additional production generated by replanted plantations.

7.2 The Contribution of the PSR to National CPO Production

After nearly a decade of PSR implementation, some of the replanted plantations have entered the mature phase. This means that the impact of the PSR can no longer be assessed only by program area, but can begin to be seen in its contribution to national CPO production.

To estimate this contribution, the analysis is based on the PSR area that has actually been planted, not the total area included in the program. Of the area planted since 2017, the area planted in 2017–2023, which will be 3 years old or older in 2026, is estimated at 251 thousand hectares. This area is used as the basis for estimating the CPO production already being generated by the PSR program.

CPO productivity by palm age is estimated based on the average performance of several superior oil palm varieties used as planting material references. Productivity is expected to rise with palm age, starting at around 1.24 MT of CPO/ha/year at 3 years old, increasing to 2.63 MT at 4 years and 4.01 MT at 5 years, and reaching around 5.68 MT of CPO/ha/year at 9 years, as shown in the following table.

Table 7. Estimated 2026 CPO Production from PSR Areas Planted in 2017–2023

Planting Year	Age (Years)	Planted Area (ha)	Potential CPO Productivity (MT/ha/year)	Estimated CPO Production (MT)
2017	9	666	5.68	3,786
2018	8	6,314	5.56	35,120
2019	7	25,801	5.29	136,492
2020	6	72,269	4.80	346,597
2021	5	66,675	4.01	267,259
2022	4	40,469	2.63	106,628
2023	3	38,614	1.24	47,853
Total/ Average	**4.4**	**250,808**	**3.76**	**943,735**

Source: Ministry of Agriculture (2026), processed and estimated by IPOSS

Taking into account the composition of the area by planting year and palm age, the weighted average productivity of the PSR area already producing in 2026 is estimated at around 3.76 MT of CPO/ha/year. With an area of 251 thousand hectares, the CPO produced is estimated to reach around 943.7 thousand MT in 2026, or close to 1 million MT of CPO per year.

Compared with the projected national CPO production of 47.3 million MT in 2026, this contribution is equivalent to about 2% of national CPO production. This figure shows that the PSR has begun to make a measurable contribution to the national palm oil supply. The benefits of the PSR are thus no longer only a potential productivity increase in the future, but have already begun to be realized in national production this year, and are expected to continue to grow along with the expansion of planted area, the aging of the palms toward maturity, and the consistent application of good agricultural practices (GAP).

7.3 PSR as a Future Source of Production Growth

The contribution of nearly one million MT of CPO from producing PSR areas illustrates the role of replanting as one source of additional national production. Unlike area expansion, which increases production by adding plantation area, the PSR increases production capacity by replacing old, low-yielding palms with new palms that have higher productivity potential.

Future additional production from the PSR comes from two sources. The first is rising productivity in PSR areas that are already producing, as the palms grow older. The second is the entry of younger PSR planting cohorts into the mature phase. PSR realization in any given year thus forms a production pipeline whose impact on national supply emerges gradually several years after planting.

This characteristic makes consistent PSR implementation important. A slowdown in replanting in one period affects not only program achievement in that year, but also reduces the additional production that should be available several years later. Conversely, accelerating actual planting today will build additional production capacity once the replanted palms begin to enter the mature phase.

This role becomes increasingly strategic as domestic palm oil demand rises. The implementation of the B50 mandate increases CPO absorption for biodiesel, while food, oleochemical, and export needs must still be maintained. Under these conditions, maintaining market balance cannot rely solely on managing the allocation of available production, but requires **sustained production growth**.

The PSR should therefore be positioned not only as a smallholder plantation replanting program, but as one of the instruments for increasing national palm oil production capacity. The contribution of around 0.94 million MT of CPO in 2026 shows that the production impact of replanting carried out in previous years is beginning to emerge. However, the size of the PSR's contribution in subsequent periods will depend heavily on the ability to accelerate actual planting now.

This is all the more important because PSR progress in recent years has not yet shown an acceleration commensurate with the scale of replanting needs. Therefore, entering 2027, policy attention needs to be directed not only at raising PSR targets, but above all at the ability to convert targets and technical recommendations into actual planting that is faster, of higher quality, and capable of delivering productivity in line with the potential of the planting material used.

7.4 Policy Outlook for Accelerating the PSR in 2027

Entering 2027, PSR policy needs to focus on building acceleration momentum by improving the implementation mechanism. The government has prepared improvements to the PSR business process through a revision of Minister of Agriculture Regulation No. 05 of 2025, particularly regarding the simplification of the application pathway and the strengthening of the verification process (Ministry of Agriculture, 2026).

One of the planned changes is to simplify the application process from the previous two pathways: the agency pathway and the surveyor pathway, into a single integrated application pathway involving both the agency and surveyors from the early stage. In addition, the role of surveyors is strengthened through on-desk and on-site verification of all application requirements. These improvements are expected to speed up the application process, improve the quality of verification, and strengthen the accountability of PSR implementation (Ministry of Agriculture, 2026).

However, accelerating the PSR does not depend only on simplifying procedures. There are three main aspects that need to be strengthened so that these changes in mechanism can result in a sustainable increase in achievement.

7.4.1 Strengthening Smallholder Institutions

Smallholder institutions are the initial foundation for ensuring the quality of PSR applications. Farmer groups, cooperatives, and other smallholder institutions need to be able to manage member data,

ensure the eligibility of prospective farmers and prospective land (calon petani dan calon lahan, CPCL), and prepare supporting documents before the verification process (BPDP, 2026b).

Going forward, institutional strengthening needs to be directed so that smallholders are not merely beneficiaries, but also the main actors in data and administrative readiness for the program (BPDP, 2026b). With better application quality from the outset, the need for corrections can be reduced, shortening the time to obtain technical recommendations.

7.4.2 Multi-Stakeholder Assistance and Financing Support

In addition to institutional strengthening, accelerating the PSR requires assistance to help smallholders meet the technical and administrative requirements of the application. The involvement of plantation companies, associations, and professional institutions has become part of efforts to accelerate the program (Directorate General of Plantations, 2023). Academics have also provided assistance through extension services, learning facilities, and support in preparing PSR proposals (Mardiana Wahyuni & Barus, 2021).

Going forward, assistance needs to be directed at strengthening the capacity of smallholder institutions to prepare and manage their own applications. Given that application requirements include smallholder and land data, plantation maps, and work plans and budgets, support needs to reach the preparation stage before technical recommendations are issued (BPDP, 2026a). To this end, service standards, the division of responsibilities, and financing mechanisms for data collection, mapping, document preparation, and follow-up on corrections need to be considered.

7.4.3 Information Systems and Verification Based on Service Level Agreements (SLAs)

Strengthening information systems is an important aspect of increasing the transparency of the PSR process. Going forward, PSR

Online should function not only as a means of submitting documents, but also as a monitoring system capable of showing the status of each application, the stage currently under way, any corrections needed, and the party responsible for following up (BPDP, 2026a).

Applying the Service Level Agreement (SLA) concept can be an instrument for ensuring that each stage has a clear service time standard. An SLA is not intended as a guarantee of approval within a certain time, but provides process certainty and helps identify bottlenecks in PSR implementation.

With stronger smallholder institutions, multi-stakeholder assistance, and a more transparent verification system, the 2027 PSR is expected to move toward a faster and more measurable process. The success of PSR acceleration will be judged not only by the increase in area entering the program, but also by the ability to ensure that replanted plantations reach optimal productivity and strengthen the long-term contribution of smallholder oil palm to national production.



CHAPTER 8. INDUSTRY AND POLICY PERSPECTIVES

8.1 Preparing for EUDR Implementation: Indonesia's Readiness from Plantation Data to Trade Evidence

Starting December 30, 2026, the EUDR applies to large and medium-sized operators that first place relevant products on the European Union market. Most micro and small operators will become subject to it on June 30, 2027. The obligation to carry out due diligence and submit a due diligence statement (DDS) rests with EU operators. To meet this obligation, they need information from producer countries' supply chains that can prove the origin of products, the legality of production, and deforestation-free status (European Commission, n.d., 2023).

In 2025, Indonesia's exports of palm oil products to the European Union reached 4.37 million MT, worth USD 4.04 billion, and reached 26 of the 27 member states. Of this total, around 2.89 million MT, worth USD 2.33 billion, came from 16 operational HS codes matched to the 12 palm oil product HS headings in Annex I of the 2023 EUDR. This volume consisted mainly of palm oil and its fractions, palm kernel oil and its fractions, and palm kernel cake and residues (Statistics Indonesia, 2026b). The scope of the EUDR will also expand at the end of 2027 with the inclusion of some oleochemical products, soaps, and palm oil derivatives. This means that evidence requirements will follow the increasingly long and diverse chain of palm oil products entering global trade (Statistics Indonesia, 2026b).

8.1.1 From Shipment to Plantation of Origin

The EUDR requires products entering the EU market to meet three main conditions: they must be deforestation-free after December 31, 2020, produced in accordance with the applicable laws of the producing country, and covered by a due diligence statement (DDS). In the due diligence process, operators must also collect information on the product and quantity, the country and period of production, the suppliers and recipients of the product, and the geolocation of all

plots of land from which the commodity was sourced. For plots larger than four hectares, geolocation information must be provided in the form of polygons (European Commission, 2023).

These requirements become more concrete when applied to an actual shipment. As an illustration, a single shipment of around 25,000 MT of refined palm oil (RPO) may come from several refineries. Assuming a yield of around 95%, this volume requires around 26,316 MT of CPO. Then, with an oil extraction rate (OER) of 20%, the raw material requirement is equivalent to around 131,579 MT of fresh fruit bunches (FFB).

Thus:

$$25{,}000\ MT\ RPO\ \div 95\% = 26{,}316\ MT\ CPO$$

$$26{,}316\ ton\ CPO\ \div 20\% = 131{,}579\ MT\ FFB$$

To illustrate the complexity of upstream suppliers, an illustrative assumption can be used that around 20% of FFB comes from the company's own estates and 80% from smallholders. If the average productivity of smallholder plantations is assumed to be around 1.5 MT of FFB per hectare per month, with an average landholding of 4 hectares per smallholder, and the collection of raw material for one shipment takes about one month, then the FFB requirement from smallholders reaches around 105,263 MT.

$$131{,}579 \times 80\% = 105{,}263\ MT\ FFB$$

This volume is therefore equivalent to approximately:

$$105{,}263\ MT\ FFB \div 1{,}5\ MT\frac{FFB}{ha} = 70{,}175\ ha$$

or approximately:

$$70{,}175\ ha\ \div 4\ ha/smallholder = 17{,}544\ smallholders$$

Thus, a single shipment of 25,000 MT of RPO could illustratively be linked to supply from around 17,500 smallholders, if most of its raw material comes from third parties. This figure is not the actual number of suppliers for every shipment, but an illustration of the scale of data and plantation sources that need to be managed in the traceability process. In practice, the number of palm oil mills, FFB suppliers, plantations, and source plots must be determined based on the company's actual transaction records and raw material flows.

Table 8. Illustration of Traceability Requirements per RPO Export Shipment [3]

Stage	Product/Unit	Illustrative Volume	Required Evidence/Data
Shipment	RPO	±25,000 MT	Cargo identity, contract, product specifications, invoice, bill of lading, volume, and export documents
Refinery	CPO	±26,316 MT	Volume allocation per CPO lot, receipt date, stock, production process, mass balance, and reconciliation to shipment volume
Palm oil mill	FFB	±131,579 MT	Origin of CPO per mill, dispatch volume, production date, weighbridge records, supplier list, and CPO–FFB reconciliation
Estate/Smallholder	FFB	20% estate; 80% smallholder	Supplier identity, FFB volume and receipt date, and the link between suppliers and source plantations
Smallholder	Supplier unit	±17,500 smallholder equivalents*	Smallholder identity, plantation area, plantation location, and the link between the volume of FFB supplied and source plots

It should be emphasized that the figure of 17,500 smallholders does not mean that a single shipment, in administrative terms, always comes from that number of suppliers. The figure indicates the potential size of the source population that must be reconcilable if most of the FFB comes from third-party smallholders. In practice, a refinery may obtain CPO from several palm oil mills, each mill receives

[3] The illustration assumes that 80% of FFB comes from smallholders, productivity of 1.5 MT of FFB/ha/month, an average plantation size of 4 ha per smallholder, and a one-month product delivery target.

FFB from many suppliers, and each supplier may be linked to one or more plantation plots.

The traceability issue therefore does not stop at the availability of plantation data. The main challenge is to ensure that the physical flow of products can be reconciled with the data flow at every node of the supply chain. The volume of RPO at the shipment level must be linkable to CPO allocation at the refinery, then to the origin of CPO from palm oil mills, FFB receipts, suppliers, and finally to the source plantation plots. The EUDR itself requires the geolocation of all plots that produced the commodities contained in the relevant products, and supply chain complexity is one of the factors that must be considered in risk assessment.

With this approach, a single shipment can be used as an end-to-end traceability test unit. The success of the system is judged not merely by the existence of applications, certificates, or databases, but by the ability to show that the volume actually traded has a consistent and unbroken data trail back to its source plantations.

A critical point arises when raw material from sources that lack adequate information or evidence has been mixed with other sources, and the link between physical volumes and their plantations of origin can no longer be reconstructed. Under such conditions, operators will have difficulty proving that the products placed on the EU market meet the applicable requirements. Traceability in the EUDR context is therefore essentially a matter of reconciling products, volumes, timing, suppliers, and source plots, not merely of collecting plantation geolocation data.

8.1.2 Three Levels of EUDR Readiness

Data availability does not automatically produce transaction evidence. EUDR readiness needs to be viewed at three levels: data availability, data linkage, and transaction evidence. The first level looks at whether data on ISPO, STDB, legality, polygons, suppliers, palm oil mills, refineries, and shipments are available. The second level looks at whether these data can be linked from the plantation

to the finished product. The third level looks at whether this linkage can be used to prove the origin and volume of a specific shipment.

Indonesia already has a number of enablers, including ISPO, STDB, geospatial data, SI-ISPO, and company traceability systems. SI-ISPO is designed to support certification, traceability, data interoperability, and access control (Coordinating Minister for Economic Affairs Regulation No. 14 of 2025, 2025). The One Map Policy and the Geospatial Information Agency (BIG) play a role mainly on the geospatial side by ensuring the consistency of references and polygons. This function does not cover proof of legality, volume reconciliation, or the origin of a shipment (Presidential Regulation Number 23 of 2021, 2021).

8.1.3 Governance and Export Readiness

Readiness also depends on a clear division of functions among actors. Regulators set standards and carry out oversight, data owners prepare and maintain the reliability of baseline data, while verifiers check the consistency of evidence and, in line with their mandate, validate the results of the checks. On the export side, the connection between export information systems and State-Owned Export Enterprise (PT Danantara Sumberdaya Indonesia, PT DSI) and traceability systems needs to be ensured, so that evidence from plantations, suppliers, palm oil mills, and refineries can be linked through to export transactions and used by EU operators in carrying out due diligence and preparing DDSs.

The most vulnerable points lie with third-party suppliers and smallholders. Legality data and plantation polygons must be linkable to the flow of FFB and CPO through to the volume of product that is ultimately shipped. Without this link, the available data cannot yet serve as evidence for a specific transaction. The challenge is therefore not merely a lack of systems, but ensuring a clear division of functions and interoperability among systems that are already in place or under development.

8.1.4 Outlook for Q4 2026–Q1 2027: Product Shipment Testing

The priority for Q4 2026 is to conduct tests on actual shipment transactions covering integrated companies, refineries with third-party suppliers, and supply chains involving smallholders. The measure is simple: whether a given export volume can be traced back to all of its source plantations, and whether this chain of evidence can be used by EU operators in carrying out due diligence.

Q1 2027 will be the evaluation point. The government needs to know how much trade volume can be fully proven, at which nodes data are still broken, and how much time and cost are needed to close each gap. The results of this testing can serve as a basis for improving systems and clarifying the compliance pathway before the product scope expands at the end of 2027.

The same evidence requirements may also arise in trade through third countries if Indonesian palm oil products subsequently enter product chains placed on the EU market. The measure of Indonesia's readiness is thus not only the availability of data, but the ability to prove the link between an export transaction and its source plantations. The need going forward is therefore to build a single interoperable compliance pathway that connects plantation data, supply chains, verification processes, and export systems, and produces a chain of evidence that EU operators can use in carrying out due diligence and preparing DDS.

8.2 Strategic Minerals and Commodities Exchange: Market Readiness Determines Price Credibility

8.2.1 BMKS Enters 2027 with Regulations Already in Place

The Strategic Minerals and Commodities Exchange (Bursa Mineral dan Komoditas Strategis, BMKS) enters 2027 with its legal basis and oversight already established. The Financial Services Authority (OJK) has issued OJK Regulation (POJK) No. 15 of 2026 on the transfer of duties and authority for regulating and supervising BMKS transactions from the Commodity Futures Trading Regulatory

Agency (Bappebti) to OJK. POJK No. 16 of 2026 governs the operation of the BMKS. POJK 15 has been in force since September 17, 2026, and POJK 16 takes effect on January 1, 2027, coinciding with the BMKS operational target (Financial Services Authority, 2026).

This framework covers trading, clearing, guarantees, transaction settlement, governance, risk management, user protection, and market integrity. Law of The Republic Indonesia Number 4 of 2026 mandates OJK to regulate and supervise transactions on the BMKS (Law of The Republic Indonesia Number 4 of 2026, 2026). The regulatory work has begun. The next stage is to ensure that the market can function.

The BMKS is intended to cover a broad range of strategic minerals and commodities. In announcing its establishment, the President named oil palm, nickel, tin, coal, gold, coffee, and rubber. This list shows palm oil's position in Indonesia's natural resource trade agenda. The designation of commodities and the trading design for each commodity still require further clarity (Ministry of State Secretariat, 2026).

Within this scope, palm oil serves as an entry point for assessing the BMKS's readiness to enter the operational stage. The commodity already has physical trading chains, diverse market participants, and prior exchange experience. The key question is whether the BMKS can attract transactions that are regular enough to form a trusted reference price. Testing in Q4 2026 needs to measure participant engagement, acceptance of product standards, and the reliability of delivery and transaction settlement. The results will form the basis for the 2027 operational design.

8.2.2 Lessons from Indonesia's Physical CPO Exchange

Indonesia already has experience operating a physical CPO market. ICDX was appointed as the operator of the Indonesian CPO Exchange in October 2023, with a mandate to build physical trading and support the formation of a reference price (ICDX, 2023). This

experience shows that building an exchange requires time, participation, and a sufficient economic rationale for business actors.

Large national production does not automatically translate into transaction depth on an exchange. Reuters recorded that Indonesian CPO futures trading in 2025 was equivalent to around 151,705 MT. The MDEX recorded CPO futures trading equivalent to 490.43 million MT in the same year. Both figures come from futures instruments and do not directly reflect the physical market. The difference nonetheless shows the gap between an emerging market and one that is widely used for pricing and hedging (Reuters, 2026).

Liquidity arises from the concentration of transactions. Producers, refineries, traders, exporters, importers, and domestic users need a reason to place orders on the same venue. Price, payment certainty, quality, delivery location, cost, and access to counterparties determine that decision. Several other factors, such as hedging needs, market maker activity, and the structure of liquidity providers, affect the quality of liquidity in commodity markets (Jain et al., 2024).

The ICDX experience also provides a foundation that the BMKS can build on. Physical trading infrastructure, clearing institutions, delivery points, and market participants already familiar with CPO trading processes need to be mapped into the new architecture. The BMKS's relationship with exchanges, clearing institutions, brokers, and physical infrastructure needs to preserve the concentration of order flow. Fragmentation of transactions will reduce market depth and weaken price information.

8.2.3 Spot Market, Liquidity, and Initial Incentive Design

The initial phase of the BMKS for palm oil needs to be tested through a single standardized CPO spot contract. The contract must have clear quality specifications, transaction size, delivery point, inspection method, payment schedule, and settlement rules. The measure of success is simple: buyers and sellers meet competitively, transactions are settled, goods are delivered according to the

contract, and both parties have an economic reason to use the exchange again.

Q4 2026 needs to test the entire transaction cycle: order entry, matching, confirmation, clearing, guarantees, quality inspection, payment, delivery, and recording of ownership. These tests need to use real transactions or dry runs with commercial consequences close to those of real transactions. Obstacles in quality, delivery points, payment, or settlement will immediately show up in costs and in participants' willingness to trade again.

The plan to make trading through the BMKS mandatory needs to be separated from the goal of price formation. A mandate can increase recorded volume, but it does not necessarily produce prices that reflect supply and demand. The initial stage would be better started with a reporting obligation to build data on prices, volumes, products, and trading patterns. Execution through the exchange needs to grow through the benefits participants experience: competitive costs, certainty of clearing and guarantees, trustworthy quality standards, and access to a wider pool of buyers. Incentives for standardization, quality testing, clearing, or transactions can be used on a limited basis and evaluated by the number of participants who remain active after the incentives end.

A mandatory execution requirement through the BMKS should only be considered once the market shows repeated transactions, two-way quotes, and reliable settlement. This decision needs to be based on the number of active buyers and sellers, transaction frequency, executed volume, the bid-ask spread, transaction costs, the settlement success rate, and delivery accuracy. These measures distinguish market growth from administrative growth (Fernandez-Perez et al., 2023; Jain et al., 2024).

8.2.4 Outlook for Q4 2026: DSI, BMKS, and Readiness Testing toward 2027

PT Danantara Sumberdaya Indonesia (DSI) and the BMKS need to be built as two connected layers with different functions. On the BMKS,

producers, refineries, traders, exporters, importers, and domestic users meet as sellers and buyers. The exchange carries out trading, clearing, guarantees, and settlement neutrally. Prices gain credibility from the transactions of many sellers and many buyers, not from a single party consolidating trade.

PT DSI sits at the data and oversight layer. Once transactions are formed, the BMKS provides the data required in accordance with its authority: transaction identity, product, quality, volume, price, counterparties, delivery point, transaction time, and settlement status. PT DSI links this data with export information and related reporting to build visibility and an audit trail. Connectivity governance needs to determine data sources, access rights, correction procedures, and the parties responsible for data quality.

This division of functions prevents PT DSI from turning into a buyer, seller, owner of goods, or sole intermediary. Such a position would add contract stages, costs, working capital needs, and commercial risk. The BMKS still needs order flow from business actors for prices to form in an open market.

The results of testing in Q4 2026 will form the basis for setting the BMKS's steps in 2027, including expanding products and participants, improving transaction design, and postponing mandates for components that are not yet ready. BMKS prices will begin to be relevant as a benchmark when transactions take place regularly and are used in commercial contracts, valuation, procurement, or risk management. An active spot market opens up room for futures contracts and hedging. Malaysia's experience shows that the relationship between spot and futures prices can support these functions once the market has developed (Ab Rahman et al., 2012).

The measures for the initial phase of the BMKS can be summarized in three points: active participants, regular transactions, and prices used by the market. These three measures are more relevant than the number of systems or registered members. Market readiness will

determine whether the BMKS develops into a trusted reference market or remains merely a transaction recording infrastructure.

8.3 HGU amid Agrarian Reform: HGU Risks and the Sustainability of the Palm Oil Industry

The enactment of the Agrarian Reform Law on September 22, 2026, brings potential risks for holders of plantation Land Use Rights (Hak Guna Usaha, HGU). These risks need to be seen not only as a legal matter for companies, but also in relation to the sustainability of the palm oil industry and the various government programs that depend on the sector's performance. If conflicts, overlaps, or correction processes concerning HGU end up hampering land administration, financing, or investment, the impact could spread to cultivation, replanting, capacity development, and downstreaming activities. If this occurs on a large enough scale, these disruptions could ultimately undermine the industry's ability to sustain the production of CPO and its derivative products.

The risk to production is becoming more strategic because the palm oil industry must now meet ever-growing domestic demand while maintaining room for exports. This Outlook projects national palm oil production in 2026 at around **52.4 million MT**, while domestic consumption rises to around 27.1 million MT and exports are projected at around 25.8 million MT. This structure shows that the margin between domestic demand and exports is becoming increasingly tight, especially as CPO demand for biodiesel rises with the implementation of B50. Under these conditions, **disruptions to the production base caused by HGU issues could further narrow the industry's ability to meet biodiesel, food, and oleochemical needs while maintaining room for exports**.

The consequences could spread further. If pressure on production then reduces the room for exports, the revenue base from the Export Levy and Export Duty could also come under pressure, with effects rippling across various parts of the palm oil industry chain. Policymakers need to pay attention to this, because the Export Levy

is one of the sources of financing for various palm oil programs, including biodiesel and the Oil Palm Replanting Program for Smallholders. HGU issues therefore ultimately concern not only the continuity of plantation companies, but may also affect the financing room for government programs and for smallholders within the same industry chain. At the same time, palm oil exports are one of the main pillars of Indonesia's trade balance. This Outlook shows that without the contribution of palm oil exports, the non-oil and gas trade balance in the first half of 2026 could have been in deficit. **Maintaining HGU certainty and the sustainability of the palm oil production base is therefore also part of efforts to maintain room for exports, state revenue, and the industry's contribution to the national economy**.



CHAPTER 9. CONCLUSION

Indonesia's palm oil industry closes 2026 with a structure that differs from previous years. This change is marked mainly by the growing role of the domestic market amid relatively limited production growth. National palm oil production is projected to reach around 52.4 million MT, while domestic consumption rises to around 27.1 million MT and exports to around 25.8 million MT. With this structure, domestic use exceeds exports for the first time in the Outlook's observation period, with a share of around 51.3% compared with 48.7%.

This change marks the formation of a new equilibrium in Indonesia's palm oil industry. The domestic market is no longer merely one of the destinations for palm oil use, but increasingly determines the direction of national supply allocation. The implementation of B50 strengthens palm oil's position in energy security, while food and oleochemical needs must still be met. At the same time, exports remain important as a source of foreign exchange, a support for the trade balance, and part of the revenue base supporting various palm oil industry development programs.

The challenge arises because domestic demand is growing faster than production. Under these conditions, exports and stocks increasingly serve as the room for adjustment. The 2026 balance shows that domestic demand and exports can still be met, but the margin between them is becoming tighter. Maintaining balance going forward is therefore not merely a matter of managing how the available supply is divided. The supply capacity of production itself needs to increase.

This increase in capacity cannot happen instantly. Palm oil production is strongly influenced by the crop's biological cycle and agro-climatic conditions. Climate dynamics can affect cultivation and harvesting in the short term, but can also have lagged effects on production formation in subsequent periods. The ability to increase production is thus determined not only by plantation area, but also by the quality

of plantation management, crop productivity, and the ability to manage climate risks.

On the economic side, this supply balance also interacts with prices and trade instruments. Global and domestic CPO prices affect the Reference Price, Export Levy, and Export Duty, which in turn shape the incentives between the export and domestic markets. As domestic demand grows, trade policy needs to be positioned as part of managing the industry's balance, not merely as a revenue instrument.

The implementation of B50 shows how close these linkages have become. Palm oil now not only generates foreign exchange through exports, but also creates economic value by reducing the need for fuel imports. Palm oil's contribution to the economy is thus developing through two channels at once: generating foreign exchange from trade and reducing foreign exchange needs through energy import substitution. This dual role strengthens palm oil's strategic position, but also increases the need to ensure that production capacity can support the growth of domestic use without continually narrowing the room for exports.

The productivity agenda is therefore becoming increasingly important. With area expansion increasingly limited, additional production increasingly needs to come from existing land. In this context, the Oil Palm Replanting Program for Smallholders is an important part of the strategy to strengthen supply. Replanted palms that have entered the mature phase are beginning to contribute to production, while younger palms will add production capacity in the years ahead. Accelerating the PSR and raising smallholder plantation productivity are thus not only an agenda for improving smallholder welfare, but also part of the strategy to secure adequate national supply.

However, higher production alone is not enough to guarantee the industry's room for growth. The industry's ability to sustain growth is also determined by market access, the quality of trade governance,

and the certainty of the production base. The implementation of the EUDR makes traceability back to the plantation of origin part of the requirements for market access. The development of the BMKS places transaction transparency and the credibility of price formation at the heart of strengthening trade infrastructure. Meanwhile, the dynamics of HGU and agrarian reform show the importance of business certainty in sustaining investment and the production base.

These three aspects show that the palm oil industry's room for growth does not lie only in the plantations. It also lies in the ability of Indonesian products to retain their markets, the ability of trading mechanisms to form value credibly, and the ability of policy to provide certainty for sustained production.

Thus, "maintaining room for growth amid a new equilibrium" does not mean preserving the industry's structure as it is. On the contrary, the new equilibrium demands a change in the sources of growth. Additional capacity increasingly needs to come from productivity, replanting, efficiency, and the strengthening of smallholder plantations, while its sustainability needs to be underpinned by market access, credible trade governance, and business certainty.

Entering 2027, the challenge for Indonesia's palm oil industry is therefore not a choice between domestic demand and exports. Both remain necessary and deliver value through different channels. The more fundamental challenge is to create additional production capacity so that rising domestic demand can continue to be met without sacrificing the room for exports, adequate stocks, and the industry's competitiveness.

Ultimately, the changes in the industry's structure throughout 2026 carry one key message: a new equilibrium requires new room for growth.

This room does not come merely from additional area, but from the ability to raise productivity, strengthen production capacity, manage risks, maintain market access, and build business certainty. The

ability to do all of these at the same time will determine how strongly Indonesia's palm oil industry enters its next phase of growth.



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