
From Recovered Assets to Sustainable Competitiveness: Agrinas Palma Nusantara as an Emerging Governance Platform for Indonesia's Palm Oil Transformation

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Abstract

Indonesia's palm oil industry combines exceptional productive advantages with persistent governance, productivity, sustainability, and value-chain challenges. The establishment of PT Agrinas Palma Nusantara (APN) as a state-owned enterprise entrusted with managing large plantation assets recovered through forest-area enforcement creates a distinctive institutional experiment in Indonesian agribusiness. This qualitative literature review critically examines how and under what conditions APN could contribute to improved palm oil governance and sustainable competitiveness. Drawing on more than 50 peer-reviewed journal articles published during 2020–2026, complemented by APN's 2025 Annual Report and its August 2026 strategic presentation, the review develops an Institutional Governance–Value Chain–Sustainability (IGVS) Nexus. Eight interconnected themes emerge: legal and asset consolidation, sustainable intensification, smallholder inclusion, downstream value creation, environmental and social safeguards, digital governance and traceability, innovation partnerships, and risks associated with rapid institutional scaling. The analysis argues that APN's significance cannot be measured primarily by the size of land under its management. Sustainable competitiveness depends instead on converting recovered assets into legally certain, transparently governed, productive, inclusive, traceable, and environmentally credible assets. APN could provide a bridge between public-policy mandates and value-chain implementation, but this role requires clearly delimited authority, independent oversight, transparent asset and revenue accounting, smallholder integration, credible ESG safeguards, and interoperable spatial and traceability systems. The paper proposes a governance-first pathway for transforming state asset recovery into long-term national value creation.

Keywords: agrinas palma nusantara, palm oil, sustainable governance, state-owned enterprise, sustainable competitiveness, smallholders, downstreaming, sustainable intensification, traceability, Indonesia

JEL Classification: L32; Q13; Q15; Q18; Q56

1. Introduction

Palm oil occupies an unusual position in debates about sustainable development. Oil palm generates substantially more vegetable oil per unit of land than major alternative oil crops and supports food, industrial, oleochemical and, increasingly, energy applications. At the same time, the historical expansion of the industry has been associated with forest conversion, biodiversity loss, carbon emissions, land conflicts, labour concerns, and political disputes over the legitimacy of commodity-driven development. Consequently, the competitiveness of palm oil in the 2020s can no longer be understood solely in terms of production volume, land productivity, processing cost, or export market share. Increasingly, competitiveness depends on whether production can simultaneously demonstrate legality, traceability, low environmental risk, credible social safeguards, technological capability, value-chain sophistication, and resilience to changing domestic and international regulations (Qaim et al., 2020; Meijaard et al., 2020; Murphy, Goggin and Paterson, 2021).

Indonesia is at the centre of this transition. Its palm oil economy has generated substantial rural income and contributed to structural agricultural transformation, yet benefits are heterogeneous across households and communities. Oil palm cultivation has improved living standards and human-capital outcomes in many settings, while exposure to price fluctuations, unequal institutional access, environmental externalities, and uneven village-level welfare effects complicate any interpretation of palm oil as automatically inclusive development (Chrisendo, Siregar and Qaim, 2021; Mehraban et al., 2021; Krishna and Kubitza, 2021; Chrisendo, Siregar and Qaim, 2022; Santika et al., 2021; Ruml et al., 2022; Mulyasari, Djarot and Sasongko, 2023; Fosch et al., 2023). Recent evidence further demonstrates substantial heterogeneity in smallholder livelihood resilience and indicates that stronger support for independent smallholders can improve welfare without making further forest conversion a necessary development pathway (Hendrawan, Chrisendo and Musshoff, 2024; Li, 2024).

Contemporary competitiveness is also constrained by an important productivity problem. Many smallholder plantations produce well below attainable yields, ageing palms create increasing replanting requirements, and access to superior planting materials, working capital, technical assistance and modern management remains unequal. Field evidence suggests that agronomic practices—including nutrient management, harvesting intervals, pruning and weed control—explain a considerable share of observed yield gaps, indicating substantial possibilities for producing more from existing plantation areas rather than relying on continued spatial expansion (Monzon et al., 2023). Replanting and improved agronomy therefore represent both economic and environmental strategies when accompanied by credible safeguards against rebound expansion (Monzon et al., 2021; Zhao et al., 2023; Petri et al., 2024; Siregar et al., 2024).

Governance presents an equally significant challenge. Indonesian palm oil is governed through a dense network of ministries, subnational governments, licensing regimes, state agencies, private companies, smallholder organisations, financial institutions, certification schemes, civil-society organisations and international market requirements. ISPO, RSPO and corporate zero-deforestation systems embody different configurations of public and private authority. Rather

than producing a simple hierarchical governance system, these arrangements can create complementarities as well as regulatory overlap, institutional ambiguity, uneven enforcement and coordination problems (Brandi, 2021; Choiruzzad, Tyson and Varkkey, 2021; Putri et al., 2022; Grabs and Garrett, 2023). Recent evidence also shows that zero-deforestation commitments often have limited reach among independent smallholders when traceability, policy communication, capacity building and economic incentives are weak, underscoring the need to link environmental rules with inclusive implementation mechanisms (Chandra et al., 2026).

Land legality illustrates this problem vividly. Improved spatial information can make plantations located within legally contested or prohibited areas visible, yet the act of identifying illegality does not itself determine whether land should be regularised, restored, redistributed, sanctioned, or managed through another institutional arrangement. Astuti et al. (2022) demonstrate that spatial visibility therefore creates governance dilemmas rather than automatically resolving them. At the same time, palm oil land conflicts reveal weaknesses in dispute resolution and unequal access to justice, while research on free, prior and informed consent (FPIC) indicates that certification rules cannot substitute for effective legal and external monitoring institutions (Berenschot et al., 2022; Afrizal et al., 2023; Afrizal, Elfitra and Zuldesni, 2023; Berenschot, Dhiaulhaq and Deviane, 2023).

It is in this context that PT Agrinas Palma Nusantara (Persero), hereafter APN, has emerged. APN represents a profound transformation of the former PT Indra Karya. The company's 2025 Annual Report describes the transformation into a state-owned enterprise focused on palm oil plantations, downstream processing, and contributions to national food and energy security. It explicitly connects this transformation with strengthened governance, risk management, human resources, information technology, upstream–downstream integration and ESG principles.

APN's institutional significance is particularly associated with state asset management. The August 2026 presentation describes a mandate for operational management of plantation assets originating from forest-area enforcement and state asset-recovery processes. At the end of 2025, the Annual Report recorded approximately 1.712 million hectares transferred for management through several phases, while also acknowledging that verification, legal arrangements and operational consolidation were continuing. The same report notes unresolved issues concerning legal status and accounting recognition for parts of the entrusted assets, reinforcing the importance of distinguishing physical management from clear and final legal-economic control. By August 2026, a strategic presentation indicated an expanded envelope of approximately 4.113 million hectares received, expected to be managed, or undergoing clarification and verification, together with 23 palm oil mills and approximately 1,380 tonnes per hour of installed processing capacity. These figures should not be read as directly comparable inventories: the 2025 Annual Report reports assets transferred by that reporting date, whereas the 2026 presentation includes a much broader and still partly verified management envelope. This rapid increase is important analytically because it transforms asset scale into an organisational, legal, environmental and accountability challenge.

APN's August 2026 strategy identifies six priority areas: strengthening asset legality, increasing productivity, developing non-planted areas, downstream development, improving farmer welfare, and strengthening plantation sustainability. The proposed mechanisms range from good agricultural practices (GAP) and productivity improvements to biodiesel, bioethanol, farmer institutional capacity and ecosystem protection. At the same time, the presentation diagnoses national problems including relatively low processing value capture, ageing palms and inadequate replanting, low mechanisation, regulatory dynamics, and coordination problems across a large number of government institutions.

The central issue is therefore not whether APN controls a large land bank. The academically more relevant question is whether a rapidly scaling state-owned enterprise can convert legally complex plantation assets into a platform for productive, inclusive and environmentally credible value creation without reproducing the governance problems that have historically constrained the sector.

This review consequently addresses the following central research question: **How and under what institutional conditions can Agrinas Palma Nusantara contribute to improving Indonesian palm oil governance while strengthening the industry's long-term sustainable competitiveness?** It also examines how legal asset consolidation, sustainable intensification, smallholder integration, downstreaming, digital traceability, environmental safeguards, and institutional coordination interact in determining that contribution.

The paper makes three contributions. Conceptually, it proposes an **Institutional Governance–Value Chain–Sustainability Nexus (IGVS Nexus)** that treats competitiveness as an institutional rather than merely cost-based capability. Empirically, it situates the emerging APN mandate within recent evidence on Indonesian palm oil governance. From a policy perspective, it specifies safeguards necessary for APN to function as a complementary implementation platform rather than becoming another overlapping institution within an already complex governance system.

2. Literature Review

2.1 Palm Oil Governance as a Polycentric Institutional System

Sustainability governance in palm oil has progressively shifted from simple government regulation toward polycentric arrangements in which state rules interact with private certification, corporate procurement standards, civil-society monitoring and international market requirements. Brandi (2021) shows that public and private sustainability governance can influence one another rather than operate independently, whereas Choiruzzad, Tyson and Varkkey (2021) identify institutional ambiguities within ISPO associated with governance rescaling and state transformation. Putri et al. (2022) likewise stress that Indonesia's sustainability challenge is inseparable from policy coherence, institutional capacity and implementation. Grabs and Garrett (2023) add that private goal-based governance can itself create paradoxes between ambitious commitments and implementation realities. Together these

studies suggest that stronger governance does not necessarily require a single institution controlling every function; it requires clear responsibilities, coordination, data sharing, accountability and credible enforcement.

Land governance intensifies the problem because legal categories, administrative boundaries, plantation concessions, forest designations and actual land occupation may not coincide. Astuti et al. (2022) demonstrate how improved mapping can expose illegal plantations while simultaneously creating difficult policy decisions over enforcement and regularisation. Berenschot et al. (2022) document extensive palm oil-related conflict and show how informal political relationships can undermine conflict resolution, while Berenschot, Dhiaulhaq and Deviane (2023) demonstrate the limits as well as the importance of civil-society brokerage. Research on RSPO grievance mechanisms and FPIC similarly indicates that certification systems can improve procedures but cannot replace effective public institutions for land rights and dispute settlement (Afrizal et al., 2023; Afrizal, Elfitra and Zuldesni, 2023).

For APN, this literature has a direct implication: managing recovered or contested plantation assets is fundamentally different from acquiring an ordinary portfolio of commercial estates. Each asset may carry legal, ecological, operational and social histories. The relevant competence is consequently not only plantation management but **institutional due diligence**—establishing boundaries, legal status, environmental condition, existing farmer and community relationships, infrastructure quality, production capacity and outstanding liabilities before determining its productive future.

2.2 State-Owned Enterprises, Public Value and Hybrid Mandates

APN also needs to be understood through the literature on state-owned enterprises. SOEs operate under a hybrid logic because they combine commercial objectives with public-policy responsibilities. Lim (2021) shows how concentrated state ownership raises distinctive corporate-governance questions, while Ruggiero, Sorrentino and Mussari (2022) emphasise the importance of financial accountability where enterprises deploy public resources and pursue socially relevant goals. Ciolomic, Beleiu and Nistor (2024) demonstrate that governance and performance remain central themes in contemporary SOE research, while Nicolò and Andrades-Peña (2024) find that governance structures can materially affect ESG disclosure practices. Adebayo and Ackers (2024) further show that state enterprises frequently face trade-offs between financial sustainability and environmental, social and governance objectives.

These insights are particularly relevant to APN because its public-policy mandate is unusually broad. It is expected to manage state-related assets productively while supporting energy security, food security, environmental sustainability and social welfare. Yet a broad mandate can produce *mission overload*. If commercial performance, employment, commodity production, energy targets, farmer welfare, ecosystem protection, land regularisation and downstream investment are all treated as equally urgent without explicit prioritisation, performance accountability becomes difficult. A governance system therefore needs to distinguish

commercial KPIs from public-service obligations and specify how any non-commercial mandate is financed, audited and evaluated.

This distinction becomes more important because APN's Annual Report itself states that forward-looking plans and strategies depend on assumptions and should not be treated as guarantees of future performance. An academically balanced evaluation should therefore distinguish APN's **mandate, capabilities already established, ongoing implementation, and aspirational targets.**

2.3 Sustainable Competitiveness and Value-Chain Upgrading

Traditional competitiveness analysis often focuses on costs, yields, export prices and market shares. For contemporary palm oil, these remain important but are insufficient. Murphy, Goggin and Paterson (2021) emphasise the biological productivity and versatility of oil palm while identifying climate, disease, supply-chain and reputational pressures that increasingly shape the industry's future. Sustainable supply-chain studies similarly show that economic, environmental and social performance need to be managed together rather than sequentially (Adwiyah et al., 2023).

Sustainable competitiveness can therefore be defined as the ability to produce and market palm-based products efficiently while maintaining legal legitimacy, environmental integrity, social inclusion, traceability and innovation capacity over time. Under this conception, sustainability expenditure is not merely compliance cost. Effective traceability, emissions accounting, responsible waste management and verifiable land status can become productive assets because they lower regulatory risk and facilitate access to increasingly selective markets.

Technology strengthens this relationship. Pribadi et al. (2023) demonstrate the value of high-resolution imagery and deep learning for identifying dispersed smallholder plantations, while El Hathat et al. (2023) examine blockchain-enabled traceability and emissions transparency in palm oil supply chains. These findings indicate that digital infrastructure can reduce information asymmetry and improve accountability rather than functioning merely as administrative automation. A recent review of precision agriculture in Indonesian oil palm plantations similarly highlights field monitoring, integrated databases, site-specific management and decision-support systems as mechanisms for simultaneously improving productivity, transparency and environmental performance (Suud et al., 2026).

Downstream upgrading constitutes another dimension of competitiveness. Indonesia captures substantially more domestic value when palm oil is processed into refined products, oleochemicals, biodiesel and other derivatives than when competitiveness is interpreted primarily as crude commodity exports. Tandra and Suroso (2023) show the continuing potential for Indonesia's downstream palm exports, while lifecycle and supply-chain research indicates that the environmental performance of downstream production depends heavily on feedstock origin, process efficiency, energy use and waste treatment (Nasution et al., 2020; Wahyono et al.,

2020). Downstreaming therefore becomes genuinely sustainable only when additional economic value is accompanied by credible environmental performance.

Energy policy illustrates the trade-off. Fitriady, Cahyaningsih and Nugrahaningsih (2026) find that Indonesia's biodiesel programme can support short-run economic and energy objectives but that increasingly ambitious mandates create export opportunity costs and potential fiscal vulnerabilities. Sustainable downstreaming consequently requires portfolio optimisation rather than an assumption that maximum biodiesel volume automatically maximises national welfare.

2.4 Smallholders, Productivity and Inclusive Upgrading

The smallholder question is central because sustainability rules that cannot be implemented by large numbers of farmers risk creating a two-tier palm economy. Apriani et al. (2020) show that independent smallholders often depend heavily on external support for certification. Watts et al. (2021) find substantial structural disadvantages related to historical exclusion from planning, agricultural extension and institutional support. De Vos et al. (2023) identify land legality, organisation, recurring certification costs and dependence on facilitators as continuing barriers, while Ogahara et al. (2022) caution that certification alone has generated only limited evidence of broad sustainability upgrading.

Mandatory certification faces related problems. Pramudya et al. (2022) identify financing, regulatory simplification, technical assistance and institutional coordination as necessary incentives for accelerating smallholder compliance. Oliphant and Simon (2022) similarly question whether certification economics are sufficiently attractive from the perspective of individual Indonesian smallholders. More recent evidence reinforces this concern: Reich and Musshoff (2025) find that training and financial incentives can significantly influence willingness to certify, while Ekaputri et al. (2025) show that independent farmers remain underrepresented in certified mill markets relative to contract-linked smallholders. Zero-deforestation initiatives can therefore unintentionally exclude producers unless institutional support is built into supply-chain reform (Eggen et al., 2024). Evidence from Central Kalimantan further suggests that jurisdictional organisation and economies of scale can substantially reduce per-farmer certification costs, although administrative capability and training remain necessary for implementation quality (Irawan et al., 2024).

Productivity upgrading provides an important route out of this dilemma. Monzon et al. (2023) find that average smallholder yields in their sample represented only about 42% of attainable yields and demonstrate that agronomic improvements could raise both output and profits on existing land. Replanting is equally significant because ageing trees lower productivity and ultimately threaten future supply. Zhao et al. (2023) show that appropriate replanting rates combined with yield improvements can stabilise production, whereas Siregar et al. (2024) demonstrate that land certificates and farmer characteristics influence participation in replanting. Petri et al. (2024) identify financing, livelihood disruption, planting materials, information and institutional limitations as interconnected replanting obstacles.

Further studies emphasise that productivity cannot be separated from institutional organisation. Jelsma et al. (2024) show the importance of collective action and long-term institutional resilience; Mettauer et al. (2021) link management practices with smallholder economic performance; and Dalheimer, Kubitzka and Brümmer (2022) demonstrate substantial technical inefficiency while warning that productivity improvements require safeguards against land-expansion rebound effects. Hendrawan and Musshoff (2024) further demonstrate that subsidy design affects the attractiveness of replanting programmes.

2.5 Environmental Sustainability and Landscape Governance

Palm oil's high biological land productivity does not eliminate environmental risk. The environmental consequences depend heavily on where plantations are located, what ecosystems they replace, how they are managed and whether production expansion is separated from forest conversion. Qaim et al. (2020) and Meijaard et al. (2020) show that palm oil generates substantial economic benefits but environmental impacts vary considerably across production contexts. Tapia, Doliente and Samsatli (2021) demonstrate that assessments of “available” land for sustainable palm oil are highly sensitive to environmental and land-use constraints.

Indonesia's declining deforestation during parts of the last decade illustrates both progress and vulnerability. Gaveau et al. (2022) show that declining oil-palm expansion and lower prices were associated with reduced deforestation, but they warn that higher prices can revive pressure on forests if regulation weakens. Sustainable intensification must therefore be conditional on enforceable protection of remaining natural ecosystems.

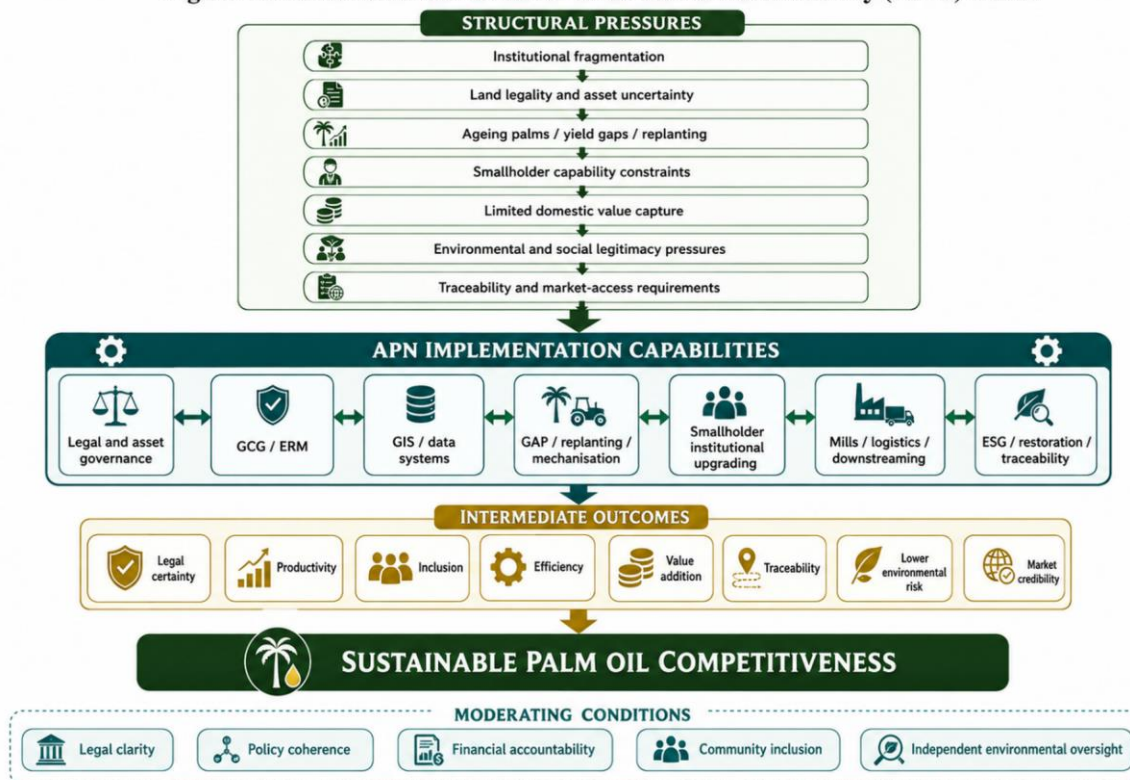
Research also indicates opportunities to improve ecological performance within existing agricultural landscapes. Ward et al. (2021) examine the challenges of peatland restoration with smallholders; Warren-Thomas et al. (2022) find possibilities for managing water tables without necessarily creating simple biodiversity–yield trade-offs; Pashkevich et al. (2021) show how replanting alters arthropod communities; and Zemp et al. (2023) demonstrate that tree islands can enhance biodiversity and ecosystem functioning in oil-palm landscapes. Montoya-Sánchez et al. (2023) similarly highlight landscape heterogeneity and soil biota in ecological restoration, while Ariesca et al. (2023) consider land-swap approaches for directing production toward more appropriate areas.

At smallholder level, environmental and economic objectives need not always conflict. Dalheimer et al. (2024) find substantial room to improve environmental performance while maintaining or increasing output, illustrating the potential for carefully designed payments for ecosystem services and better farm practices. These findings are directly relevant to a state enterprise managing a heterogeneous land portfolio: not every hectare should have the same productive function, and restoration, conservation, community use and commercial production may each be appropriate depending on legal and ecological conditions. Complementary multidimensional assessment across Indonesian provinces likewise underscores that smallholder sustainability is shaped by interacting economic, social, environmental and institutional conditions rather than by production indicators alone (Supriatna et al., 2024).

2.6 The Institutional Governance–Value Chain–Sustainability Nexus

The preceding literature suggests that the principal weakness of conventional approaches is analytical fragmentation. Governance is often discussed separately from productivity; productivity separately from smallholder inclusion; downstreaming separately from landscape conservation; and certification separately from state capacity. Yet these dimensions interact. Figure 1 provides the conceptual architecture used in this review.

Figure 1. Institutional Governance–Value Chain–Sustainability (IGVS) Nexus



Source: Authors' synthesis based on the reviewed literature and APN institutional documents.

Figure 1. Institutional Governance–Value Chain–Sustainability (IGVS) Nexus

Note. Source: Authors' synthesis based on the reviewed literature and APN institutional documents.

Figure 1 emphasises that APN's potential influence does not run directly from land ownership or land management to competitiveness. Asset scale must pass through institutional capabilities. Legal certainty, agronomic upgrading, smallholder inclusion, downstream integration, data quality and environmental safeguards are transmission mechanisms. Failure in any one area can weaken the others. A highly productive plantation that lacks traceability can lose market legitimacy; a legally regularised estate with poor productivity may remain financially weak; and downstream capacity supplied through environmentally questionable feedstock can transfer rather than eliminate sustainability risk.

3. Method

This study employs a **qualitative literature review (QLR)** rather than a systematic literature review. The objective is interpretive and theory-building: to integrate recent evidence from palm oil governance, smallholder development, sustainable intensification, environmental management, value-chain upgrading, and SOE governance in order to assess the emerging institutional role of APN. Accordingly, the review does not claim exhaustive database coverage, does not use PRISMA procedures, and does not infer representativeness from article counts.

Academic literature was purposively identified from journal publications dated **2020–August 2026**. Priority was given to recent empirical studies, high-quality review articles and theoretically relevant papers published in established international journals addressing Indonesian palm oil, sustainability certification, smallholders, land governance, productivity, replanting, biodiversity, bioenergy, supply chains, digital traceability, or SOE governance. Search concepts included combinations of “Indonesia”, “palm oil governance”, “oil palm smallholders”, “ISPO”, “RSPO”, “certification”, “replanting”, “yield gap”, “sustainable intensification”, “land legality”, “deforestation”, “traceability”, “downstreaming”, “biodiesel”, “state-owned enterprise”, “corporate governance” and “ESG”. Citation chaining was used to identify conceptually complementary contemporary studies.

The analytical corpus underpinning the article comprises more than 50 peer-reviewed journal articles. The aim was theoretical saturation rather than exhaustive enumeration. Studies were retained where they informed at least one element of the IGVS Nexus: institutional governance; productivity and replanting; smallholder inclusion; environmental and social legitimacy; downstream value creation; technology and traceability; or state-enterprise accountability.

Two APN-specific sources were examined separately from the journal corpus: the company's **2025 Annual Report** and the **31 August 2026 presentation on palm oil for national food and energy security**. These materials provide evidence about APN's stated mandate, organisational development, transferred assets, strategic priorities, technological plans and forward-looking ambitions. Corporate statements were not treated as independent evidence of successful outcomes. This distinction is important because APN's Annual Report expressly warns that its projections and plans are forward-looking and may differ materially from future realised performance.

The analysis proceeded through iterative thematic coding. First-order codes included legality, asset status, replanting, productivity, smallholders, farmer organisations, mills, downstreaming, biodiesel, food security, ESG, biodiversity, spatial data, traceability, corporate governance, risk and inter-agency coordination. These codes were subsequently grouped into eight higher-order themes. The final stage involved interpretive comparison between the constraints identified in peer-reviewed literature and the mechanisms described in APN's strategy.

Rigour was strengthened through three forms of triangulation. First, corporate claims were compared with peer-reviewed evidence concerning the broader palm-oil sector. Second, potential

benefits were analysed together with contradictory evidence and implementation risks. Third, APN's 2025 and 2026 documents were temporally differentiated so that changes in the scale of reported land management were not incorrectly interpreted as inconsistent data.

The methodology nevertheless has limitations. APN is a newly transformed organisation and therefore lacks sufficient longitudinal operating data to establish causal effects on national palm-oil governance, farmer welfare, biodiversity or sectoral competitiveness. This paper consequently evaluates APN's **institutional potential and conditions for effectiveness**, not its proven long-term impact. Future research should test the propositions developed here through plantation-level panel data, independent environmental monitoring, farmer surveys, value-chain analysis and longitudinal institutional evaluation.

4. Results: Thematic Findings

4.1 Theme 1 — From Asset Recovery to Legal and Institutional Consolidation

The first theme concerns APN's most distinctive characteristic: it is receiving plantation assets through a state enforcement and asset-management process rather than expanding exclusively through conventional commercial acquisition. The August 2026 presentation connects APN's management mandate with the recovery of forest-area assets and assignments involving the relevant state institutional architecture.

This creates both opportunity and institutional risk. Large-scale asset consolidation could allow government to convert previously problematic or uncertain production areas into monitored and professionally operated estates. The literature on land governance suggests that improved mapping and formal identification of illegal plantations can enable stronger oversight, but the existence of a spatial map does not settle legal rights, environmental liabilities or social claims (Astuti et al., 2022). A recovered plantation therefore needs an asset-specific decision tree rather than automatic conversion into a conventional state commercial plantation.

The 2025 Annual Report itself provides evidence for this caution. APN reported approximately 1.712 million hectares handed over for management, yet it simultaneously acknowledged continuing verification and legal processes and stated that certain plantation revenues had not yet been recognised in company accounts because legal and accounting treatment required further clarification.

This is a highly significant governance issue. An enterprise managing recovered assets needs a clear separation among beneficial management rights, legal ownership, operating responsibility, custodial responsibility and financial entitlement. Ruggiero, Sorrentino and Mussari (2022) demonstrate why financial accountability is particularly sensitive for SOEs with complex public mandates. Without explicit rules for asset recognition, income attribution, reinvestment and liability allocation, rapid expansion can generate accounting opacity even when operational performance improves.

The findings therefore suggest that APN's first contribution to sustainable competitiveness should be **institutional cleansing and clarification of the asset base**, not simply acreage accumulation. Each transferred area should be classified according to legal status, physical condition, planted area, forest cover, community claims, environmental liabilities, productive potential, mill access and required rehabilitation.

4.2 Theme 2 — Sustainable Intensification Rather Than Acreage Maximisation

The second theme concerns productivity. APN's August 2026 programme explicitly prioritises good agricultural practices and the optimisation of plantation productivity and efficiency. This direction is strongly consistent with contemporary evidence.

Smallholder studies demonstrate that large yield gaps can be reduced through better nutrient management, harvesting practices, pruning and weed management (Monzon et al., 2023). Replanting can further stabilise future production where trees have passed their economically optimal age (Zhao et al., 2023). However, replanting involves several years of foregone harvest revenue, making financing and livelihood transition central rather than secondary issues (Petri et al., 2024; Siregar et al., 2024; Hendrawan and Musshoff, 2024).

For APN, the scale of the portfolio creates an opportunity to move beyond conventional estate management toward precision asset segmentation. Mature productive blocks, over-aged stands, abandoned areas, ecologically sensitive zones, forested areas and socially contested areas should not be subjected to identical productivity targets.

The literature further warns that productivity gains do not automatically generate environmental benefits. Dalheimer, Kubitz and Brümmer (2022) demonstrate that efficiency gains may theoretically reduce land requirements, but rebound effects remain possible when higher profitability encourages expansion. Climate-smart intensification therefore requires an explicit “no conversion” constraint around remaining natural ecosystems (Monzon et al., 2021). In this interpretation, APN's competitive advantage would arise not from controlling more land but from demonstrating higher output and value per legally appropriate productive hectare while reducing pressure for new conversion.

4.3 Theme 3 — Smallholder Inclusion as Governance Infrastructure

The third theme is smallholder inclusion. APN's strategic presentation identifies strengthening farmer capacity and institutions, raising incomes and supporting community independence as priority objectives. This is important because smallholders are not simply beneficiaries of sustainability policies; they are part of the infrastructure through which those policies succeed or fail.

Evidence from Indonesia consistently demonstrates that independent smallholders experience disadvantages in legality documentation, organisational capacity, agronomy, financing and certification. Watts et al. (2021), Apriani et al. (2020), de Vos et al. (2023), Pramudya et al.

(2022), Ogahara et al. (2022), Oliphant and Simon (2022), Reich and Musshoff (2025) and Eggen et al. (2024) converge on a central finding: imposing sustainability standards without complementary capability-building risks excluding precisely the farmers who most need institutional upgrading.

Ekaputri et al. (2025) provide particularly relevant evidence by showing that independent smallholders were substantially underrepresented in certified mill supply compared with contract-linked farmers. This suggests that mill-level sustainability upgrading can unintentionally produce structurally differentiated market access.

APN could potentially address this through **jurisdictionally grounded farmer upgrading** around its estates and mills. Instead of treating farmers as external suppliers expected to become compliant independently, APN could integrate land-document assistance, farmer mapping, group formation, extension, access to quality seedlings, replanting finance, digital records, certification preparation and guaranteed transparent market channels.

Such a model would also support rural development. Research indicates that oil palm can improve welfare and human capital, but outcomes depend on initial conditions, market relationships and community institutions (Chrisendo, Siregar and Qaim, 2021, 2022; Mehraban et al., 2021; Krishna and Kubitza, 2021; Santika et al., 2021). Smallholder inclusion is therefore not peripheral corporate social responsibility; it is part of the governance architecture required for sustainable supply.

4.4 Theme 4 — Downstreaming and Domestic Value Capture

The fourth theme concerns the relationship between plantation assets and downstream industry. APN's strategic direction explicitly includes an integrated upstream-to-downstream value chain and bioenergy. The August 2026 priorities likewise identify biodiesel and bioethanol development and increased product value addition.

This direction is economically logical. Greater domestic processing can increase value capture, diversify demand and reduce dependence on crude-product exports. Research by Tandra and Suroso (2023) indicates continuing potential for Indonesian downstream palm-oil exports, while supply-chain studies emphasise that value creation increasingly depends on integrated economic, environmental and social performance (Adwiyah et al., 2023).

However, the concept of downstreaming should be broader than biodiesel. Palm-based value chains can encompass refined foods, oleochemicals, specialty fats, surfactants, biomass utilisation, biogas and other higher-value materials. A diversified portfolio can reduce exposure to a single policy-dependent market.

Bioenergy also requires caution. Fitradhy, Cahyaningsih and Nugrahaningsih (2026) find positive short-term macroeconomic effects from biodiesel penetration but identify diminishing benefits, export opportunity costs and potential funding vulnerabilities at increasingly high mandates.

Lifecycle research further indicates that biodiesel's environmental performance depends strongly on plantation origin and production processes (Wahyono et al., 2020). Palm oil mill effluent (POME) management can likewise materially influence lifecycle environmental performance, making methane capture and advanced waste treatment relevant components of industrial upgrading (Nasution et al., 2020). APN's downstream strategy should therefore optimise national value per unit of sustainable feedstock, rather than simply maximising physical conversion volumes.

4.5 Theme 5 — Sustainability as a Market-Access Capability

The fifth theme concerns sustainability as a source of competitive legitimacy. Historically, environmental protection has sometimes been framed as a constraint on palm-oil competitiveness. Recent evidence suggests that such a separation is increasingly untenable. Markets, financial institutions and downstream buyers progressively require evidence of legal and environmentally responsible sourcing.

Indonesia has also demonstrated that deforestation trajectories can change. Gaveau et al. (2022) document declining oil-palm expansion and reduced deforestation during part of the last decade, while emphasising that commodity prices and regulation remain important determinants. This means institutional gains are reversible if expansion incentives are not controlled.

At plantation level, ecological management can be integrated into productive landscapes. Tree islands can increase biodiversity and ecosystem functioning (Zemp et al., 2023); diversified landscape structure can support multi-taxa biodiversity (Montoya-Sánchez et al., 2023); improved peatland management can reduce environmental risk (Ward et al., 2021; Warren-Thomas et al., 2022); and biodiversity-sensitive smallholder management may improve environmental efficiency without necessarily requiring proportional production sacrifices (Dalheimer et al., 2024).

These findings are especially important for APN because its 2026 portfolio includes land classified not only as planted oil palm but also forest areas and areas still under verification. The presence of forest within the management envelope should not be interpreted as unused commercial land. Instead, it creates an obligation and opportunity to institutionalise conservation, restoration and spatial zoning before productivity targets are assigned.

Social legitimacy is equally important. Palm-oil conflicts in Indonesia demonstrate the consequences of weak land-right recognition and ineffective grievance procedures (Berenschot et al., 2022; Afrizal et al., 2023). APN therefore needs transparent mechanisms for consultation, FPIC where applicable, grievance handling, compensation and conflict resolution rather than relying solely on the legality of the state transfer mechanism.

4.6 Theme 6 — Digital Governance, GIS and Traceability

The sixth theme is digital governance. APN's Annual Report describes an IT Master Plan covering IT governance, infrastructure, integrated applications, information security, data management, GIS and management dashboards. It specifically identifies GIS applications for operational mapping, land-asset identification and verification, land-use monitoring, development planning and compliance with spatial and legal requirements.

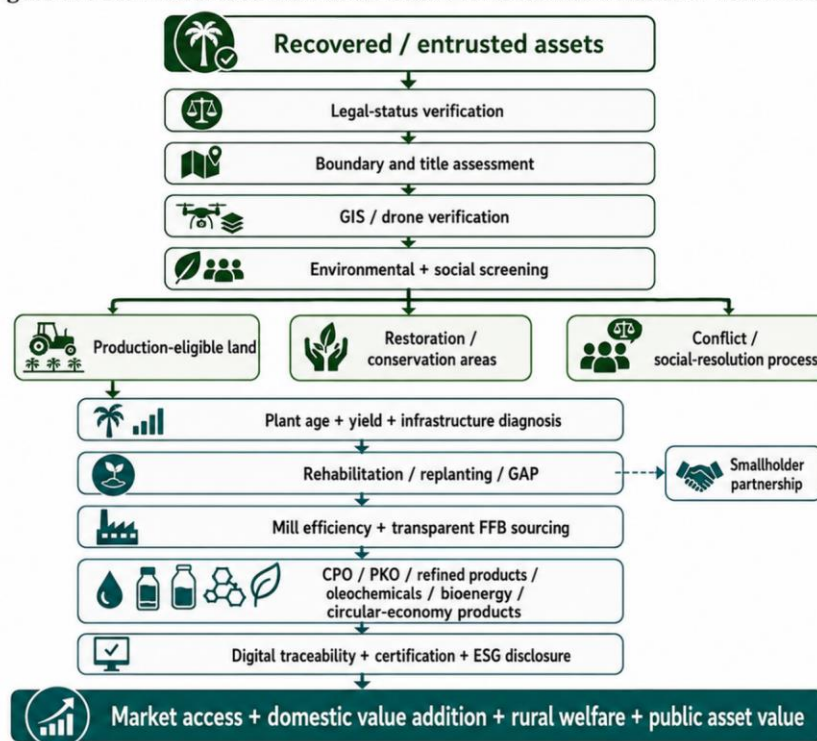
This capability could become one of APN's most important governance contributions. Spatial uncertainty has historically complicated the identification of concessions, smallholder farms, forest boundaries and legality. Astuti et al. (2022) show the governance importance of making plantation illegality spatially visible, and Pribadi et al. (2023) demonstrate that modern remote sensing and deep learning can significantly improve mapping of fragmented smallholder plantations.

The key innovation would be to move from internal GIS toward an **interoperable plantation governance architecture**. Every production unit could have a persistent spatial identity linked to legal documents, plantation age, planting material, farmer identity where relevant, sustainability status, harvest records, mill destination and environmental attributes.

Traceability would then become a management tool rather than a certification exercise performed after production. Technologies such as blockchain are not automatically solutions, but research demonstrates their potential for improving transparency in emissions-intensive commodity supply chains when underlying data are reliable (El Hatham et al., 2023).

The company's September 2025 launch of e-procurement similarly indicates an emerging digital-governance orientation aimed at improving transparency and accountability in procurement. The deeper challenge is to apply comparable transparency to plantation assets, suppliers and commodity flows. Figure 2 summarises this proposed transformation pathway.

Figure 2. From Recovered Plantation Assets to Sustainable National Value Creation



Source: Authors' synthesis.

Figure 2. From Recovered Plantation Assets to Sustainable National Value Creation

Note. Source: Authors' synthesis.

The substantive message of Figure 2 is that **asset recovery is the beginning rather than the end of governance reform**. Productive utilisation should occur only after legal, ecological and social screening. This sequencing avoids the risk that pressure for rapid commercialisation converts unresolved environmental or community liabilities into future corporate liabilities.

4.7 Theme 7 — Innovation, Partnerships and Organisational Capability

The seventh theme is organisational capability. The scale and diversity of APN's mandate make it unrealistic for the company to internalise every competence. Partnership capacity is therefore a strategic asset.

The 2025 Annual Report records collaboration with IPB University directed toward plantation and agro-industrial research, innovation, human-resource development and sustainable plantation management. It also reports collaboration with Universitas Indonesia in education, research and natural-resource management. Such partnerships are potentially important because the industry requires continuous improvement in agronomy, seed quality, disease management, remote sensing, mechanisation, carbon accounting and processing technology.

APN's organisational structure also includes dedicated plantation management, processing, mechanisation, strategic operations, legal and compliance, licensing, logistics, partnerships, human resources and occupational-health/environment functions. The formal existence of these functions is necessary but not sufficient. Rapid expansion means managerial capability must grow at roughly the same pace as asset responsibility.

This finding aligns with SOE governance research: performance depends not simply on ownership structure but on organisational capability, managerial incentives, board oversight, transparency and accountability (Lim, 2021; Ciolomic, Beleiu and Nistor, 2024; Nicolò and Andrades-Peña, 2024). For APN, capability development therefore needs to be measured through objective operational indicators rather than only organisational structure.

4.8 Theme 8 — Rapid Scaling as a Governance Stress Test

The final theme integrates the preceding findings. APN's scale increased extraordinarily quickly between its 2025 institutional transformation and the broader 2026 management envelope. This creates strategic leverage, but also concentration of risk.

As summarised in Figure 3, the area should not be presented simply as “four million hectares of APN oil palm plantation”. Much of the broader envelope remained under verification, while only part was reported as planted oil palm. This distinction is important scientifically and for public accountability.

Rapid scaling can create at least six interacting risks: unclear legal status, uneven asset quality, environmental liabilities, community conflicts, managerial overstretch and financial/accounting ambiguity. These risks become mutually reinforcing if production targets precede due diligence. Figure 4 translates these risks into corresponding safeguards.

Figure 3. Evolution of APN's Reported Plantation-Asset Management Envelope

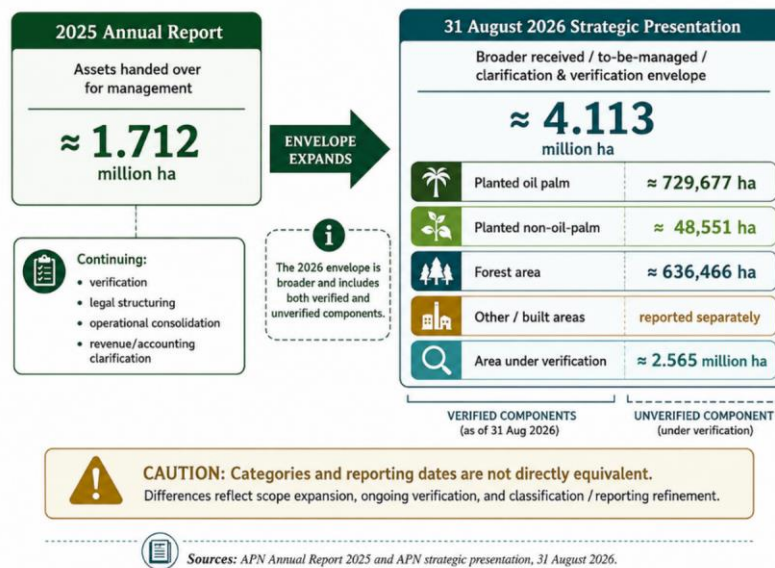
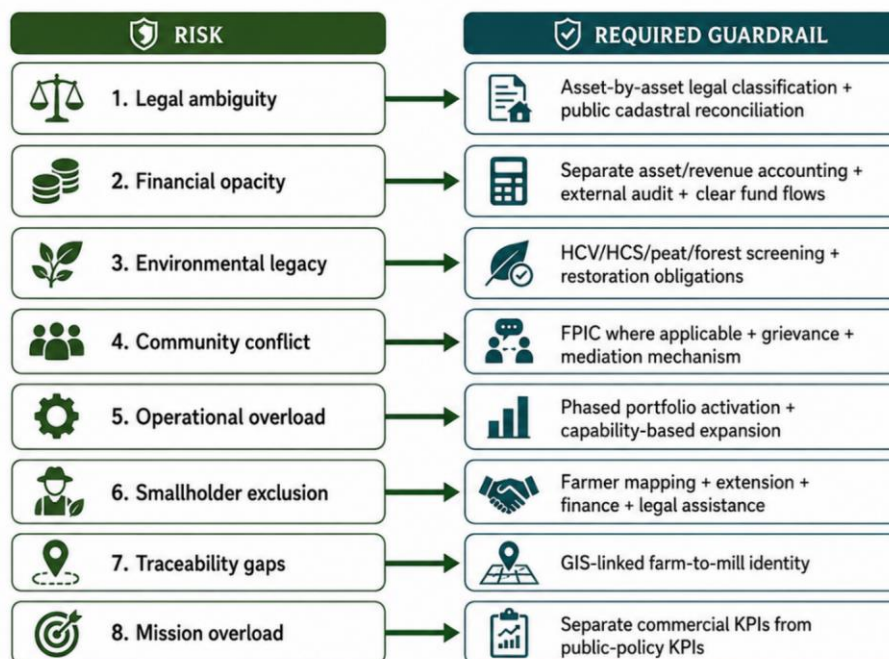


Figure 3. Evolution of APN's Reported Plantation-Asset Management Envelope

Note. Source: APN Annual Report 2025 and APN strategy presentation, 31 August 2026.

Figure 4. Governance Guardrails for APN's Sustainable Scaling



Source: Authors' synthesis.

Figure 4. Governance Guardrails for APN's Sustainable Scaling

Note. Source: Authors' synthesis.

The central implication is that governance safeguards should be designed **before** the asset portfolio is fully commercialised. Otherwise, APN could become operationally large without becoming institutionally strong.

5. Discussion and Analysis

5.1 Answering the Central Question: What Role Can APN Realistically Play?

The evidence supports a qualified answer to the central research question. APN can potentially strengthen Indonesian palm-oil governance not by replacing ministries or becoming a super-regulator, but by operating as a **state-owned implementation platform** at the point where regulation, assets and value-chain operations meet.

This distinction is essential. The August 2026 presentation argues that Indonesia needs stronger institutional coordination over issues including licensing, research, funding, smallholder replanting and promotion. However, that discussion should not be interpreted as evidence that all of these regulatory functions have legally been transferred to APN. A state enterprise responsible for operating plantation assets is institutionally different from a government authority empowered to regulate all sector participants.

A more defensible model is complementary. Ministries and regulators establish rules; relevant state authorities determine land status and enforcement; certification bodies assess standards; financial institutions allocate funding; local governments handle territorial functions; and APN can operationalise coherent governance within assets and supply chains under its responsibility. Such an implementation role can still generate sector-wide influence through demonstration effects. If a large state enterprise demonstrates transparent asset classification, digitally verified boundaries, smallholder inclusion, low-deforestation supply, measurable productivity improvement and high-standard ESG reporting, these practices can become benchmarks for the wider sector.

5.2 From State Capacity to Competitive Capability

The IGVS Nexus suggests a distinction between **state capacity** and **competitive capability**. State capacity concerns the ability to establish rules, recover assets, enforce legality, coordinate institutions and mobilise public resources. Competitive capability concerns the ability of firms and farmers to convert those institutional conditions into efficient production, innovation, differentiated products and market access.

APN occupies an unusual boundary position between the two. It receives assignments arising from state action but must subsequently manage the resulting assets commercially and sustainably. Its success therefore depends on preventing the logic of enforcement from being confused with the logic of production.

This helps explain why legal clarity must precede aggressive investment. An oil-palm mill may be physically productive while the status of its supplying plantations remains contested.

Similarly, a plantation can generate fruit while revenue recognition remains institutionally unclear. APN's 2025 reporting of unresolved revenue-recognition issues illustrates precisely why operational control and financial ownership cannot be assumed to be identical.

SOE governance literature reinforces the point. Public ownership can support long-term strategic investment, but goal ambiguity and weak accountability can create performance problems (Ruggiero, Sorrentino and Mussari, 2022; Lim, 2021). ESG disclosure and independent governance mechanisms become especially important when a company is simultaneously expected to deliver commercial returns and public value (Nicolò and Andrades-Peña, 2024; Adebayo and Ackers, 2024).

5.3 Productivity Should Become the First Source of Growth

The literature strongly supports placing productivity ahead of acreage expansion. Indonesia has substantial opportunities to increase production within the existing plantation footprint through better agronomy, replanting and improved management (Monzon et al., 2021, 2023; Zhao et al., 2023). This is strategically compatible with APN's priority on GAP and productivity.

A governance-first productivity programme would start by constructing a digital age–yield–soil–management profile for every productive plantation block. Such a system could distinguish low yield caused by old palms from low yield caused by nutrient deficiencies, poor planting material, harvesting losses, labour shortages or access constraints. Investment could then target the causes rather than applying uniform rehabilitation programmes.

Replanting needs particularly careful sequencing. A rapid replanting programme can reduce output temporarily because newly planted palms require several years before producing commercially meaningful harvests. Smallholder households face an even more severe income problem because they may depend on current oil-palm production for daily consumption. Siregar et al. (2024), Petri et al. (2024), Hendrawan and Musshoff (2024) and Jelsma et al. (2024) collectively demonstrate that replanting is an institutional-financial problem as much as an agronomic one.

This suggests that APN should treat replanting as a **portfolio management problem**. The objective should be to stagger replanting so that aggregate mill utilisation, national production and farmer incomes remain sufficiently stable while the biological capital stock is renewed.

5.4 Smallholders Should Be Treated as Partners, Not Compliance Risks

One of the most consequential strategic choices facing APN is whether surrounding smallholders are viewed mainly as supply-chain risks or as partners in productivity and sustainability upgrading. The literature strongly favours the latter.

Certification can create market and environmental benefits, but evidence repeatedly demonstrates that independent farmers face disproportionate entry costs (Apriani et al., 2020;

Watts et al., 2021; de Vos et al., 2023; Pramudya et al., 2022). The problem is not simply unwillingness. Many farmers lack titles or standardised documentation, formal groups, management records, financing and technical assistance. Their exclusion can therefore be institutionally produced. Because livelihood resilience differs markedly across smallholder groups, support packages should be differentiated rather than designed around a single representative farmer (Hendrawan, Chrisendo and Musshoff, 2024).

This creates an opportunity for APN to develop a farmer-inclusive model around each mill catchment. Farmer plots could be mapped and linked to local organisations; legality assistance could be coordinated with government; replanting could be aggregated; technical services could be shared; and transparent grading and pricing systems could reduce information asymmetry.

Such an approach would also increase APN's traceable fresh fruit bunch (FFB) supply while distributing benefits beyond state-managed estates. Importantly, it should not force farmers into exclusive dependency on APN. Farmer cooperatives need independent organisational capacity and bargaining power. The purpose should be to reduce transaction costs and improve capability, rather than substitute a new dependency relationship for an old one.

Santika et al. (2021) demonstrate why this contextual approach matters: certification's welfare effects vary according to pre-existing village livelihood structures. APN should therefore avoid assuming that a standard farmer programme will generate uniform outcomes across Riau, Kalimantan, Sumatra, Papua and other regions.

5.5 Downstreaming Needs a Portfolio Logic

APN's downstream agenda is strategically important, but it should not be reduced to a singular biofuel narrative. Palm oil's broad chemical versatility allows integration into food products, oleochemicals, surfactants, specialty ingredients and renewable-energy pathways. The objective should be to maximise risk-adjusted national value rather than simply maximise processing volume.

Biodiesel presents a useful case. It can increase domestic demand, reduce fossil-fuel import exposure and potentially support national energy security. However, Fitriady, Cahyaningsih and Nugrahaningsih (2026) show that benefits become more complicated as blending requirements rise because export opportunities and fiscal support become relevant.

This suggests a dynamic optimisation framework involving CPO prices, domestic food demand, biodiesel economics, export margins, fiscal costs and emissions performance. Downstream investment should also prioritise products capable of producing relatively high value from relatively small quantities of feedstock.

Circular-economy opportunities should be integrated at mill level. POME methane capture, biomass utilisation, biogas and improved waste management can reduce environmental burdens while creating additional energy streams (Nasution et al., 2020). Sustainable competitiveness is

therefore not only about moving “downstream” but extracting more useful value and lower environmental impact from each unit of harvested biomass.

5.6 Environmental Legitimacy Must Be Built Into the Asset Model

APN's unusual portfolio makes environmental governance particularly important. The August 2026 material reports substantial forest areas and an even larger area still undergoing verification. These categories should be protected from simplistic interpretation as an inventory awaiting plantation development.

A credible system should designate each asset into explicit ecological and productive classes. Existing natural forest, high carbon stock (HCS) ecosystems, peatlands and high conservation value (HCV) areas require protection or restoration. Degraded but legally appropriate production land may be suitable for rehabilitation. Areas with unresolved tenure need legal and social resolution before productive investment.

This strategy aligns with contemporary environmental evidence. Meijaard et al. (2020) emphasise the importance of evaluating palm oil's environmental effects relative to land-use context rather than through commodity labels alone. Gaveau et al. (2022) demonstrate how regulatory conditions and market incentives influence deforestation trajectories. Zemp et al. (2023) and Montoya-Sánchez et al. (2023) show that ecological functions can be partly restored within plantation landscapes.

Environmental stewardship could become a comparative advantage for APN if state-managed assets provide independently verified evidence that recovered land is being moved toward lower environmental risk. Conversely, management of a very large land portfolio without strong ecological safeguards would magnify reputational and market risks. This approach is consistent with evidence that stronger institutional support for independent smallholders can reconcile livelihood objectives with forest conservation more effectively than framing the two goals as an unavoidable trade-off (Li, 2024).

5.7 Digital Traceability Can Become APN's Systemic Contribution

Perhaps the most scalable contribution APN could make to Indonesian palm-oil governance lies in data. Land problems, certification, replanting, smallholder assistance, forest protection and supply-chain traceability all depend on knowing precisely **who produces what, where, under what legal status, and through which mill and downstream facility**.

APN already identifies GIS, data governance and integrated information systems as components of its technology roadmap. The next step would be to integrate spatial data with operational and sustainability data.

A unique plantation identifier could link spatial polygons with plantation age, legal documents, production history, smallholder organisation, environmental classification and mill deliveries. This would permit risk-based audits and make irregular changes visible more quickly.

Research by Pribadi et al. (2023) demonstrates that high-resolution remote sensing can address the challenge of scattered smallholder plantations. El Hathat et al. (2023) similarly illustrate how digital traceability can support emissions accountability. Technology, however, cannot compensate for inaccurate source data. Digital traceability must therefore be combined with field verification, farmer participation and interoperable government databases. Recent evidence on zero-deforestation commitments reinforces this point: limited bottom-up traceability and weak producer-facing capacity building can leave independent smallholders only partially connected to sustainability governance even when downstream firms have adopted formal commitments (Chandra et al., 2026).

5.8 Governance Boundaries Are as Important as Governance Capacity

The analysis also identifies an institutional paradox. The more governance problems APN is expected to solve, the greater the temptation to expand its role. Yet uncontrolled institutional expansion could recreate the coordination problems it is intended to reduce.

APN should therefore not become simultaneously operator, regulator, verifier, financier and final adjudicator. Conflicts of interest would arise if the same organisation setting production targets were also solely responsible for determining whether the land underlying those targets satisfied all environmental and social requirements.

Independent verification is therefore essential. Environmental audits, certification, financial audits, social-impact assessments and dispute-resolution processes require institutional separation. APN can maintain data and implement corrective actions while external bodies verify compliance. This principle is consistent with corporate-governance scholarship, which shows that independent oversight and transparency are particularly important in SOEs facing multiple objectives (Lim, 2021; Ciolomic, Beleiu and Nistor, 2024; Nicolò and Andrades-Peña, 2024; Ruggiero, Sorrentino and Mussari, 2022; Adebayo and Ackers, 2024).

5.9 A Governance-First Roadmap for APN

The synthesis supports a phased institutional pathway. The first phase should emphasise asset legality, spatial verification, baseline environmental and social assessment, transparent accounting and identification of liabilities. The second phase should focus on rehabilitation, GAP, replanting, mill efficiency, workforce capability and surrounding smallholder integration. The third phase should accelerate diversified downstreaming, circular economy applications, traceable market access and innovation partnerships.

These phases need not be temporally uniform across all estates. One asset may be ready for downstream integration while another remains in legal due diligence. A portfolio-based approach is therefore superior to uniform national targets.

Performance measurement should similarly extend beyond hectares and CPO tonnes. A balanced scorecard for APN would include yield per mature hectare, replanting success, mill utilisation, extraction rates, legal-status completion, percentage of traceable supply, smallholder productivity, certification progress, farmer income outcomes, forest condition, restoration performance, emissions intensity, unresolved grievance cases and domestic value added.

APN's own corporate strategy already emphasises GCG, risk management, ESG and sustainable transformation. The challenge is to convert those principles into measurable outcomes independently verifiable by stakeholders.

5.10 Theoretical Implications

The APN case contributes to three broader debates. First, it extends the literature on SOEs by illustrating the potential role of a state-owned company as a **transition institution**: an organisation not merely producing commodities but converting recovered assets into new governance arrangements.

Second, it contributes to sustainable value-chain theory by showing that competitiveness can originate from governance capability. Legal clarity, traceability and environmental credibility lower risk and can facilitate market access just as productivity improvements lower physical production costs.

Third, the analysis contributes to debates on sustainable intensification. Increasing yields becomes environmentally meaningful only when institutional rules prevent productivity gains from generating new expansion. The mechanism linking agronomy to conservation is therefore governance.

The IGVS Nexus thus suggests that **state capacity, productive efficiency and sustainability cannot be treated as independent determinants of competitiveness**. They form a mutually dependent system.

6. Conclusion

Agrinas Palma Nusantara represents one of the most unusual institutional developments in contemporary Indonesian palm oil. Its rapid transformation from the former PT Indra Karya, the assignment of large plantation-related assets, and its stated priorities in productivity, downstreaming, farmer welfare, digitalisation and sustainability create the possibility of a state-owned implementation platform operating across multiple links in the palm-oil value chain.

The fundamental conclusion of this review is nevertheless that **scale should not be confused with capability**. Managing millions of hectares does not automatically strengthen governance, increase sustainable competitiveness or create public value. The decisive issue is whether APN can transform heterogeneous and in some cases legally complex assets into transparent, legally certain, productive, socially legitimate and environmentally credible economic assets.

The strongest pathway begins with governance rather than production targets. Land status, asset ownership, revenue rights, ecological condition, community claims and existing operational liabilities need to be clarified before aggressive commercial investment. GIS and digital verification should become foundational infrastructure for this process. Independent audits and public disclosure are necessary because rapid asset expansion substantially increases accountability risks.

The second strategic priority should be sustainable intensification. Higher productivity on legally appropriate existing plantations, combined with carefully sequenced replanting, offers a stronger long-term growth strategy than acreage maximisation. Replanting programmes must incorporate the economics of transition, particularly for farmers who cannot absorb several years of reduced harvest income.

Third, smallholders should be incorporated as production and governance partners. Farmer legality, organisation, agronomic capability, finance, traceability and certification should be treated as integrated problems. A state enterprise with mills, spatial data and institutional reach could substantially reduce the transaction costs of upgrading independent farmers, provided partnerships strengthen rather than diminish farmer autonomy.

Fourth, downstreaming should maximise sustainable value rather than simply physical throughput. Biodiesel is strategically relevant but should form part of a diversified product portfolio that balances food, energy, exports, fiscal resilience and environmental performance. Oleochemicals, refined products, circular-economy applications and bioenergy from plantation and mill residues can broaden domestic value capture.

Fifth, environmental integrity must be embedded in APN's asset model. Forested, peatland, high-conservation-value and socially contested areas cannot be treated as a reserve for future production. Conservation, restoration and community-based uses should be legitimate portfolio outcomes alongside commercial plantation management.

Finally, APN's appropriate institutional role is complementary rather than super-regulatory. Indonesia's palm-oil governance challenges cannot be solved by transferring every coordination function to one enterprise. APN can instead become an implementation bridge connecting state policy with plantation-level practice, smallholder upgrading, digital traceability, responsible processing and downstream innovation.

Under these conditions, APN could demonstrate an important development proposition: **state asset recovery can generate greater national value when recovered land is transformed not merely into production, but into legally credible, technologically transparent, socially inclusive and environmentally sustainable production systems.** The ultimate measure of APN's contribution should therefore not be the number of hectares brought under state management. It should be the quantity and quality of sustainable public value created from each hectare—and whether that transformation makes Indonesian palm oil more productive, legitimate, inclusive, resilient and competitive.

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