



RISK INFORMATION
ALLIANCE

Indonesia - Rubber

Risk assessment overview

June 2026



Assessment description

| SCOPE | |
|---|--|
| Geographical scope | Indonesia – whole country |
| Commodity or product | Natural rubber |
| Other scoping element, if any | N/A |
| DETAILS | |
| Period of development for the initial draft (prior to consultation) | November 2025 – January 2026 |
| Rationale for development | First pilot for the RIA indicators and methodology. Lack of existing detailed assessment coupled with strong shared interest for the commodity among RIA Members. |
| Language(s) | English |
| DEVELOPERS | |
| RIA Members involved in development | Preferred by Nature Support from FSC Local subcontractors: <ul style="list-style-type: none"> • Muhammad Sofiyuddin (Lead Consultant) • Aslama Nuraulia (Consultant) • Arifandy Ahmad (Consultant) • Ananda Rizky Septyan (Consultant) |
| Expert outreach, if applicable | In the period of December 2025-January 2026, 5 experts/stakeholders were consulted. Additional expert interviews are planned in February 2026. |
| Stakeholder consultation | The stakeholder consultation was conducted between February 12 th 2026 and March 31 st 2026. |

Key highlights

Process highlights

The risk assessment follows the RIA draft methodology in place and assesses legality and sustainability indicators related to land tenure, management, and environment, conversion risks, social issues and corruption, trade and taxes.

The first draft of the risk assessment was developed based on publicly available information by a team of local consultants. The draft assessment process and review was led by Preferred by Nature.

AI tools have been used with moderation to support the identification of relevant sources of information and knowledge. All assessment findings have been drafted and reviewed by experts.

The draft assessment is fully aligned with the existing 2025 GPSNR risk assessment. It does provide more information and a different format.

Following the consultation period, the risk assessment will be made publicly available as an open resource, supporting risk-based approaches to sustainability, starting with RIA Members' own assurance systems. It is

also designed as a shared knowledge base for the rubber sector to support due diligence, smallholder engagement, landscape initiatives, and continuous improvement efforts aligned with global sustainability frameworks.

Content highlights

- Most indicators of this assessment have a non-negligible risk conclusion.
- **Negligible risk:** only a few isolated indicators (degradation of forests ecosystems, use of GMO, misclassification of products, link to armed conflict) have a negligible risk conclusion.
- **Non applicable indicators:** there is a handful of non-applicable indicators (export and environmental taxes, trade restrictions or sanctions and CITES).
- **Precautionary approach:** There are quite a number of indicators which have a non-negligible risk conclusion out of precautionary approach. A general risk picture was identified at national level, but there is a lack of sufficient sources and data specifically for the rubber sector. Such indicators may change risk level based on sufficient additional elements of expertise and evidence. Examples include violations related to the legal rights of Indigenous and Traditional peoples, the use of chemicals banned by international Conventions, the rights of association, anti-discriminations requirements and practices, corruption and document falsification or the payment of area / land taxes.
- Non-negligible risks are driven by the **following factors**:
 - There is a dominance of smallholders and informal production systems.
 - There is a gap between strong formal regulations and actual implementation and enforcement. This is applicable throughout the whole assessment.
 - The Indonesian legislation often does not meet best sustainability practices. The most prominent discrepancy is relating to deforestation: the Indonesian legislation only regulates deforestation on land officially classified as forest land, while the FAO and EUDR definition of deforestation are independent of formal land classification. This leads to several sustainability indicators not being met by the legislation and sector practices.
- **Main non-negligible risks** - examples of key non-negligible risk include:
 - Unclear land tenure rights, relating to land security, planning and sustainable management.
 - High level of environmental degradation linked to land management and fire risks.
 - Structural conditions of informal labour arrangements and livelihood vulnerability leading to weak implementation of legal and responsible practices related to workers.

Main results



1. LAND RIGHTS AND THIRD PARTIES' RIGHTS

- All indicators are under a **non-negligible risk** conclusion.
- **Land tenure rights** for rubber in Indonesia remain insecure overall, with formal rights on private and state estates undermined by inconsistent disclosure, overlapping claims, and unresolved community disputes. Smallholders face even greater risks due to reliance on largely unregistered and informal tenure arrangements.
- **Formal harvesting or documentation** prior to operations is not always in place, regardless of the type of plantation.
- Private estates face small-scale **encroachment**, theft, and land occupation. State-owned plantations may report large-scale illegal occupation.
- Identification and respect for **rights of Indigenous Peoples, Traditional Peoples and customary and communities** remain inconsistent across the rubber sector, with unresolved cases of conflicts. The legal indicators have been concluded non-negligible risk out of a precautionary approach.
- **FPIC principles** for Indigenous and Traditional peoples are not sufficiently upheld, including where legal requirements are respected.



2. MANAGEMENT ACTIVITIES AND ENVIRONMENTAL PROTECTION

- All indicators (except on GMOs) are under a **non-negligible risk conclusion**.
- Key risks on **management activities** include the absence or outdated status of environmental permits as well as insufficient fire-prevention in peatland and fire-prone areas. Widespread informality among smallholders leads to a common lack of formal permits, documented standard operating procedures, and awareness of legal requirements.
- Compliance with legal requirements for managing impacts caused by **fires, pest and diseases** cannot be consistently demonstrated across all types of rubber systems.
- Poorly planned or managed **infrastructure** such as drainage canals, access roads, ditches, and other transport or water-management structures may cause peat subsidence, fires, flooding, erosion, and social conflict—particularly in wetland areas and where smallholders or plantation operators lack adequate environmental assessment.
- **Waste management** in Indonesia's rubber sector is uneven, with large private and state-owned estates generally having formal systems but notable gaps in monitoring and record-keeping. Smaller estates and smallholders often struggle with or mishandle hazardous waste, particularly from pesticide use.
- There is a risk of **pollution** linked to the use of pesticide – this is stronger for smallholders, but other types of plantation also display infrastructure gaps, inconsistent implementation, legacy practices, and limited transparency.
- **Water-related issues** in Indonesia's rubber production mainly stem from weak enforcement of water protection rules, resulting in pollution from agrochemicals and untreated wastewater—especially among smallholders—while private estates also face persistent risks due to incomplete implementation and monitoring gaps.

- Rubber plantations can significantly undermine **soil protection** by causing soil compaction, erosion, nutrient depletion, loss of organic carbon and biodiversity, and—especially in monoculture and drained peatland systems—long-term degradation of soil structure, fertility, and stability.
- Uneven compliance with **hazardous agrochemicals** handling, storage, and disposal regulations.
- Despite a strict legal prohibition on **land burning** with criminal penalties, studies continue to document slash-and-burn practices, which remains a widespread land-clearing method in rubber areas, used by both smallholders and in some cases larger actors to reduce clearing costs or dispose of crop residues.
- Rubber plantations face high risks from **invasive weeds and pests** that suppress seedling growth, raise control costs, drive excessive herbicide use, and increase erosion or fire hazards.
- There are no **GMO rubber trees** in Indonesia.



3. ECOSYSTEM CONVERSION, DEGRADATION AND HCV PROTECTION

- All the applicable indicators related to conversion and HCV protection are assessed as **non-negligible risk**.
 - Indonesia's legal framework strictly stipulates that forest conversion can be carried out through formal legal mechanisms. Evidence shows that **forest conversion has continued** after December 31, 2020, partly linked to agricultural expansion, including potential rubber commodity expansion. Peatlands are under ongoing pressure from land conversion and are often converted to plantations such as rubber and other crops.
 - Indicators related to degradation from rubber plantations are considered **negligible risk**, as the establishment of new rubber plantations would be classified as land-use conversion rather than degradation. Encroachment of rubber into jungle rubber systems is limited, and the scale of any potential degradation is therefore small.
 - **High-conservation values (HCV)** are insufficiently protected in the context of rubber production.
 - **HCV1:** The expansion and management of rubber plantations—particularly monoculture systems—pose a significant risk to HCV1 through habitat loss, fragmentation, and reduced species diversity.
 - **HCV2:** Risks to Intact Forest Landscapes (IFL) and HCV2 arise when available datasets are not used for screening, leading to plantation expansion into sensitive areas.
 - **HCV3:** Rubber plantation expansion threatens HCV3 ecosystems such as peat swamps, lowland dipterocarps, and riparian forests by shrinking and fragmenting them.
 - **HCV4:** Rubber expansion threatens HCV4 ecosystem services by accelerating erosion and sedimentation, especially on steep slopes, undermining watershed functions and downstream safety.
 - **HCV5:** In rubber landscapes, drainage, fencing, or conversion can cause immediate losses to HCV5 sites—water sources, subsistence fields, NTFPs, and cultural areas.
- HCV6:** HCV6 sites—burial grounds, sacred areas, heritage sites, and cultural landscapes—are vital to community identity. Risks arise when assessments lack ethno-cultural participation, leaving sites undocumented and vulnerable to clearing or infrastructure. The risk is negligible for smallholder rubber plantations as they would usually act as guardians and custodians of tradition.



4. HUMAN RIGHTS

- There is no indication that rubber production is linked to **armed conflicts**.
- All other relevant indicators have a **non-negligible risk conclusion**.
- Non-negligible risk concluded out of precautionary approach for **modern slavery**: despite a formal legal prohibition of forced and compulsory labour, Indonesia's documented modern-slavery prevalence and lack of transparent, plantation-wide compliance data in the rubber sector create a material risk that forced labour or trafficking may occur or go undetected in rubber plantations.
- **Child labour** risk is concentrated in smallholder rubber production due to economic pressure and informal labour structures, while private and state plantations show policy-level compliance but lack publicly verifiable, system-wide evidence of full implementation.



5. LABOUR RIGHTS

- All indicators have a **non-negligible risk conclusion**, with some out of a precautionary approach.
- **Health and safety**: PPE provision, chemical handling, training and incident reporting are inconsistently implemented, especially among smallholders and contract/seasonal workers. **Worker housing and related facilities** frequently do not meet adequate health and safety standard.
- Piece-rate or casual tappers and some contract workers lack **written contracts**, formal competency certification, and consistent training, while regional enforcement actions show foreign-worker permit breaches in plantation areas.
- Documented **wage** structures and payment practices in rubber plantations, including share-based payment systems and low daily/piece rates for tappers, indicate that legal wage and payment obligations (and social protection coverage) are not consistently met. Multiple studies and field-based reports indicate that rubber plantation workers remain far from achieving a living wage.
- Indonesia has not ratified key ILO **working-time** conventions. Evidence from rubber plantations is fragmented and shows both lawful working patterns and labour disputes related to working time.
- Despite Indonesia's strong legal guarantees on **freedom of association and collective bargaining**, there are limited available evidence on actual practices in rubber plantations. A non-negligible risk conclusion has been taken out of precautionary approach.
- There is limited evidence to confirm effective enforcement of **anti-discrimination** laws and practices in rubber plantations: a non-negligible risk conclusion has been taken out of precautionary approach.
- Indonesia has a clear legal framework on **gender-equality protections** (including maternity leave and anti-discrimination), but there is weak enforcement in rural plantation areas, including lack of plantation-level pay parity data, limited company disclosure of gender-policy implementation, and documented smallholder-level gendered vulnerabilities.
- There is also a risk that **parental-leave rights** are not fully observed in rubber production.



6. ECONOMIC AND TRADE CONDITIONS

- There is a **mix** of non-negligible risk conclusions, some taken out of precautionary approach, not applicable indicators and one negligible risk conclusion.

- **Corruption and bribery** remain a structural risk in Indonesia, affecting transparency and legal compliance within the rubber plantation sector despite strong formal anti-corruption laws. A non-negligible risk conclusion has been taken out of precautionary approach.
- Documented cases of **falsification** of land titles, permits and trade documents across Indonesia's natural-resource sectors renders the rubber sector similarly vulnerable. A non-negligible risk conclusion has been taken out of precautionary approach.
- There is a non-negligible risk that **royalties, land taxes and fees** are not consistently paid or transparently recorded (conclusion taken out of precautionary approach).
- There is a simplified **VAT collection** regime to certain agricultural products including rubber (rubber sap), but widespread farm-gate informality among smallholders, limited invoice issuance, and low public granularity in company reporting create verification gaps.
- Limited concession-level transparency, smallholder informality and governance disputes around land/financial transactions create a non-negligible risk that **corporate tax** (profit tax) compliance cannot be fully verified across the rubber supply chain.
- Indonesia currently does not impose an **export duty** on natural rubber (non-applicable indicator).
- There are no applicable **environmental taxes** (non-applicable indicator).
- Compliance with legal requirements for **trade and transport** of rubber is inconsistent, particularly at smallholder and first-collector levels, due to weak documentation practices and fragmented enforcement.
- There are no applicable **trade restriction or sanction**.
- There is a negligible risk of **misclassification** of rubber products.
- Administratively demanding **export requirements**, reliance on intermediaries, limited public disclosure of origin documentation and occasional cases of illicit export or mis-declaration in other commodity sectors increase the risk of irregular rubber export consignments. A non-negligible risk conclusion has been taken out of precautionary approach.
- Compliance with **transfer pricing** and related-party transaction requirements in Indonesia's rubber sector is uncertain among large corporate plantation groups, due to offshore trading exposure and limited public transparency. A non-negligible risk conclusion has been taken out of precautionary approach.
- **CITES** requirements are not applicable.

Indicators' overview

| Land rights and third parties' rights | Management activities and environmental protection | Ecosystem conversion, degradation and HCV protection |
|--|---|---|
| Land tenure and management rights are secure. | Management activities are legally conducted. | Forests and other ecosystems are not converted. |
| <ul style="list-style-type: none"> Land tenure rights are clearly defined, legally secure, and registered in compliance with applicable legal requirements. Land management rights are clearly defined, legally secure, and registered in compliance with applicable legal requirements. | <ul style="list-style-type: none"> Legal requirements for management activities and related operational requirements are complied with. Legal requirements related to the management of the impacts caused by natural processes such as fires, pests and diseases are complied with. | <ul style="list-style-type: none"> There is no conversion from forest to agriculture after 31 December 2020. There is no conversion of forest, including forest plantations, after January 2008. There is no conversion of natural and semi-natural forest after 31 December 2020. |
| Required permits, planning and protection from illegal activities are in place. | Infrastructure associated with management activities is developed and maintained, ensuring minimum impacts on environmental values. | There is no conversion from natural non-forest ecosystems, such as peatland, wetland and biodiverse grassland after January 2008. |
| <ul style="list-style-type: none"> Harvesting or operational permits are in place and are issued and registered according to legal requirements. Legal requirements for land-use and management planning are complied with. Land areas under management are protected from illegal encroachment and activities. | <ul style="list-style-type: none"> Legal requirements for the protection of environmental values during development and maintenance of infrastructure associated with management activities are complied with. Development and maintenance of infrastructure associated with management activities is done in a way that minimises adverse impacts on environmental values. | There is no conversion from natural non-forest ecosystems such as peatland, wetland and biodiverse grassland after 31 December 2020. |
| Rights of third parties are respected. | Waste resulting from management activities is managed and minimized. | Forest and natural ecosystems are not degraded. |
| <ul style="list-style-type: none"> Legal requirements related to the rights of Indigenous Peoples are complied with. Legal requirements related to the rights of Traditional Peoples are complied with. Legally recognized customary and community rights are identified and respected. | <ul style="list-style-type: none"> Legal requirements related to the storage, treatment and disposal of waste during management activities are complied with. The volume and impacts of waste storage, treatment, and disposal as a result of management activities are managed and minimised. | <ul style="list-style-type: none"> There is no degradation of natural forests since 31 December 2020. There is no degradation of non-forest natural ecosystems. |
| The rights of Indigenous Peoples are respected and upheld according to the principles of Free, Prior and Informed Consent (FPIC). | Pollution resulting from management activities is controlled and minimized. | High conversation values are protected, maintained or enhanced. |
| <ul style="list-style-type: none"> The rights of Indigenous Peoples are respected and upheld according to the principles of Free, Prior and Informed Consent (FPIC). The rights of Traditional Peoples are respected and upheld according to the principles of Free, Prior and Informed Consent (FPIC). The rights of local communities are respected and upheld. | <ul style="list-style-type: none"> Legal requirements related to pollution, resulting from management activities are complied with. Pollution, resulting from management activities is controlled and minimised. | <ul style="list-style-type: none"> Legal requirements related to biodiversity conservation, protected sites, and the protection of endemic, rare, threatened, or endangered species and their habitats are complied with. |
| | Water resources are protected and used responsibly during management activities. | Concentrations of biological diversity including endemic species, and rare, threatened, or endangered species that are significant at global, regional or national levels are identified protected, maintained or enhanced (HCV1). |
| | <ul style="list-style-type: none"> Legal requirements related to the use and protection of water resources are complied with. Water resources are protected and used responsibly with the aim of ensuring long-term viability. | Intact forest landscapes and large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional, or national levels, and which contain viable populations of the great majority of the naturally-occurring species in natural patterns of distribution and abundance, are identified and protected, maintained or enhanced (HCV2). |
| | Soil is protected during management activities, and negative impacts are minimised with the aim of securing soil's health. | Rare, threatened, or endangered ecosystems, habitats or refugia are identified and protected, maintained, or enhanced (HCV3). |
| | <ul style="list-style-type: none"> Legal requirements related to the protection of soils during management activities are complied with. Negative impacts from management activities on soil's physical, chemical and biological conditions are managed and minimised to secure soil health. | Basic ecosystem services in critical situations, including the protection of water catchments and control of erosion of vulnerable soils and slopes, are identified and protected, maintained, or enhanced (HCV4). |
| | Chemicals are used responsibly in management activities with minimal negative impacts on the environment. | Sites and resources fundamental for satisfying the basic needs of local communities or Indigenous Peoples are identified and protected (HCV5). |
| | <ul style="list-style-type: none"> Legal requirements related to the use, application, storage, and disposal of chemicals in management activities are complied with. The use, application, storage, and disposal of chemicals in management activities are conducted in a manner that prevents harm to the environment. Hazardous or chemicals banned by international conventions are not used in management activities. | Sites, resources, habitats, and landscapes of global, national or local cultural, archaeological, or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples are identified and protected, maintained, or enhanced (HCV6). |
| | The use of burning or fire for land preparation and waste management is avoided, whenever possible, and in case of use, it is justified and impacts are minimised. | |
| | <ul style="list-style-type: none"> Legal requirements related to the use of open burning/fire in operations for land preparation and waste management are complied with. The use of open burning/fire in operations for land preparation and waste management managed and negative impacts minimized. | |
| | Invasive species in production are controlled and GMOs are not used. | |
| | <ul style="list-style-type: none"> Legal requirements related to the use, monitoring and control of invasive species are complied with. The use of invasive species is monitored, controlled and impacts mitigated. There is no commercial use of GMO. | |

| Human rights | Labour rights | Economic and trade conditions |
|---|--|--|
| Human rights are respected in all aspects of operations and activities. | Health and safety - facilities and activities are safe and support worker's health. | Corruption, fraud and conflict of interest |
| <ul style="list-style-type: none"> Human rights are respected according to international law including the International Labour Organization (ILO) fundamental Conventions. Harvest or trade in products do not contribute to armed conflict. | <ul style="list-style-type: none"> Legal requirements related to occupational health and safety of workers are complied with. Activities are safe and support worker's health, and workers have access to and use appropriate Personal Protective Equipment for the activities undertaken. Housing and facilities are safe and support worker's health. | <ul style="list-style-type: none"> Legal requirements related to corruption, including bribery are complied with. Bribery and corruption does not take place. Data and document falsification does not occur. |
| Modern slavery, including forced and compulsory labour, are not taking place. | Workers' rights related to recruitment and contracting are respected. | Taxes, fees and royalties are paid according to legal requirements. |
| <ul style="list-style-type: none"> Legal requirements on modern slavery, including forced and compulsory labour, are complied with. Modern slavery, including forced and compulsory labour are not used, promoted, or supported in any way. | <ul style="list-style-type: none"> Legal requirements related to contracts, working permits, competence certifications and other training requirements are complied with. | <ul style="list-style-type: none"> Legal requirements related to payment of royalties, land/area taxes and fees are complied with. Legal requirements related to payment of value-added taxes and/or other sales taxes are complied with. Legal requirements related to payment of corporate taxes are complied with, including profit taxes. |
| Child labour is not occurring and employment of young workers is responsibly managed. | Workers are paid fairly and responsibly. | <ul style="list-style-type: none"> Legal requirements related to payment of trade and/or export taxes and fees are complied with. Legal requirements related to environmental taxes are complied with. |
| <ul style="list-style-type: none"> Legal requirements related to child labour are complied with. Child labour is not present, and the employment of young workers is responsibly managed. | <ul style="list-style-type: none"> Legal requirements related to workers' wages and other payments, such as social insurance, are complied with. Workers' wages meet or exceed minimum industry standards or other recognized industry wage standards. | Trade and transport of products are conducted according to legal requirements and do not contribute to illicit trade. |
| | Working hours, overtime, rest time and time off are fair and responsible. | <ul style="list-style-type: none"> Legal requirements related to trade and transport of products are complied with. Legal requirements related to applicable trade restrictions and sanctions are complied with. Legal requirements related to the classification of products are complied with. |
| | <ul style="list-style-type: none"> Legal requirements related to working hours, overtime, rest time and time off, are complied with. ILO conventions related to working hours, overtime, rest time and time off, are complied with. | <ul style="list-style-type: none"> Legal requirements related to export and/or import are complied with. Legal requirements related to offshore trading and transfer pricing are complied with. Legal requirements related to due diligence or due care are complied with. |
| | Freedom of Association, the Right to Organise and the Right to Collective Bargaining are allowed. | <ul style="list-style-type: none"> Legal requirements related to the harvesting, collection and trade of CITES species are complied with. |
| | <ul style="list-style-type: none"> Legal requirements related to the Freedom of Association, the Right to Organise and the Right to Collective Bargaining are complied with. Workers has the Right to Organise and the Right to Collective Bargaining as specified in the ILO Fundamental Principles and Rights at Work. | |
| | There are equal opportunities for all, and no discrimination against workers. | |
| | <ul style="list-style-type: none"> Legal requirements related to discrimination are complied with. There is no discrimination against workers. | |
| | Legal requirements related to gender equality in the workplace are complied with. | |
| | <ul style="list-style-type: none"> Gender equality is protected following best practices. Right to maternity and paternity leave is ensured as defined by ILO 183 and is observed and implemented. | |

- Non-negligible risk: there is a non-negligible risk that the indicator is not met.
- Non-negligible risk – precautionary approach: there is no sufficient information to conclude negligible risk.
- Negligible risk: there is a negligible risk that the indicator is not met.
- Not applicable: the indicator is not applicable in the target country and commodity context.



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The **Risk Information Alliance (RIA)** is a collaboration of organisations working together to address the growing complexity of corporate due diligence and responsible business practices. By pooling resources, funding, and expertise, RIA facilitates the joint production of credible, high-quality, and up-to-date risk data across commodities, sectors, and geographies.

Through the development of a shared methodology, indicators, and a blueprint for a risk data storage platform, RIA enables its members to share and access risk data efficiently and cost-effectively. This collaboration supports better-informed sourcing decisions, stronger sustainability investments, and more consistent due diligence outcomes.

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Learn more: www.riskinformationalliance.org

