



GOVERNMENT OF THE REPUBLIC OF INDONESIA



THE SEVENTH

NATIONAL REPORT OF INDONESIA

*to the Convention on
Biological Diversity*





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NATIONAL REPORT OF INDONESIA



Biological Diversity



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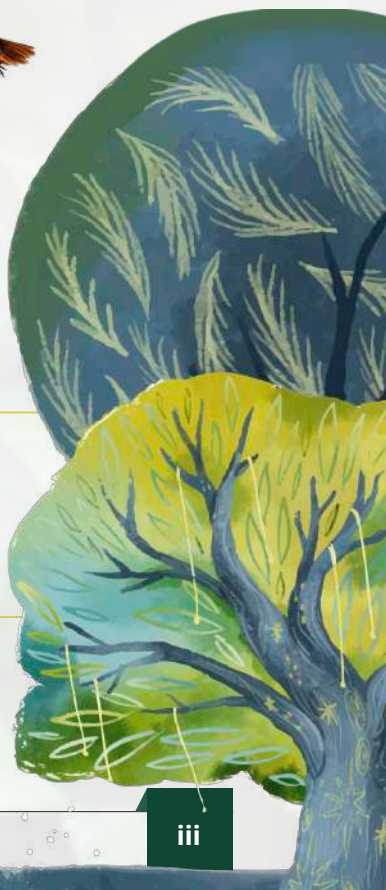
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Executive Summary

Indonesia ratified the Convention on Biological Diversity (CBD) through Law No. 5 of 1994 and has since developed successive National Biodiversity Strategy and Action Plans (IBSAP 2003–2020, 2015–2020, and 2025–2045). As part of its commitment to the global biodiversity agenda, Indonesia regularly submits National Reports to the CBD Secretariat to communicate progress, constraints, and key implementation challenges.

Over the past three decades, biodiversity has become increasingly central to sustainable development, aligning with the CBD's vision of *Living in Harmony with Nature* and the Kunming–Montreal Global Biodiversity Framework (KMGBF). This vision is closely linked to *Golden Indonesia 2045*, the national development vision marking 100 years of independence.

The seventh National Report presents Indonesia's progress from 2018 to June 2025 in contributing to the KMGBF and the Sustainable Development Goals (SDGs). The report was prepared through an inclusive, multi-stakeholder process involving government institutions, local governments, and non-state actors, including civil society organizations, private sectors, youth, and local communities. The updated IBSAP 2025–2045 establishes 20 national biodiversity targets harmonized with the National Long-Term Development Plan (*Rencana Pembangunan Jangka Panjang Nasional/RPJPN 2025–2045*), the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional/RPJMN 2025–2029*), and the KMGBF. These targets support ecosystem integrity, species conservation, and the sustainable use of biodiversity, contributing to the SDGs.

Significant progress has been recorded. Biodiversity values are fully integrated into the National Spatial Plan (100%), and approximately 60% of regional spatial plans (307 regencies/cities) incorporate biodiversity considerations through Strategic Environmental Assessments (*Kajian Lingkungan*

Hidup Strategis/KLHS). By 2025, 49 million ha of High Conservation Value Areas outside protected areas have been identified and verified. Between 2018 and 2025, Indonesia rehabilitated 1.56 million ha of degraded forest and land (including mangroves), equivalent to 11.69% of critical land, and restored 5.99 million ha of peat ecosystems (24% of total Peat Hydrological Areas). As of 2024, total designated protected areas for terrestrial and marine ecosystems reached 52.3 million ha, including 30.97 million ha of marine protected areas, equivalent to 9.5% toward Indonesia's 30% marine conservation target by 2045.

Indonesia continues to strengthen conservation of species and genetic diversity through a structured prioritization approach, supported by Species Conservation Action Plans (SRAKs) and National Action Plans (RANs) for key terrestrial and aquatic species. National Red List assessments have been completed for priority taxa, including endemic mammals, birds, orchids, and primates, contributing to efforts to reduce extinction risk. In parallel, significant progress has been made in safeguarding genetic resources: 120 livestock breeds have been conserved and registered in FAO's DAD-IS system, supported by 20 artificial insemination centers and one livestock embryo center functioning as genetic conservation facilities. In addition, 802 plant varieties are formally protected, comprising food crops, horticulture, and plantation crops.

Indonesia reports progress across multiple KMGBF areas, including invasive alien species control, pollution management, climate resilience, sustainable use, ecosystem service valuation, Access and Benefit Sharing (ABS) implementation, biosafety, science and technology, data integration, policy mainstreaming, inclusive participation, private-sector engagement, and incentive reform. Under Target 6, a strengthened legal and institutional framework, supported by quarantine and sectoral regulations, enables prevention, early detection, and control through risk-based management,

surveillance, trade monitoring, updated prohibition lists, national databases, and restoration actions. Pollution management has also improved through standardized monitoring, including the Water Quality Index and real-time systems that enhance assessment and early warning across major watersheds.

Indonesia continues strengthening its ABS framework. In 2024, genetic resource use generated IDR 251.8 billion in sales and IDR 5.7 billion in royalties, supported by 231 access permits, 107 Free, Prior, and Informed Consent (FPIC) agreements concluded with 95 customary and 7 local communities, and utilization of 203 agricultural genetic resources (120 livestock breeds/lines and 83 crop varieties), including Digital Sequence Information (DSI) documentation.

In terms of financing, the Biodiversity Expenditure Review indicates that biodiversity funding remains dominated by domestic public expenditure (approximately 77%), with international public finance contributing 17% and private finance around 5.9%. In 2024, biodiversity-related expenditure accounted for approximately 0.68% of total ministerial spending.

Despite this progress, implementation of the KMGBF and national biodiversity targets continues to face cross-cutting challenges. Capacity limitations, particularly in interdisciplinary expertise and engagement beyond the biodiversity sector, constrain coordinated action, while technological gaps in monitoring systems, data integration, and indicator development limit adaptive management. Data availability remains uneven, especially outside protected areas, and scientific support for complex environmental management is still developing. Additional pressures arise from land-use change, monoculture expansion, reduced local genetic diversity in agriculture, and underutilization of local varieties. Financial constraints remain a major barrier, as domestic resources and sustainable financing mechanisms are still insufficient to support large-scale conservation, restoration, and community-based initiatives.





Foreword

Indonesia has completed the preparation of the Seventh National Report on the Implementation of the Convention on Biological Diversity as a reflection of its continued commitment to implementing the Convention and contributing to the achievement of the targets of the Kunming–Montreal Global Biodiversity Framework (KMGBF).

As a megabiodiversity country with globally significant terrestrial, coastal, and marine ecosystems, Indonesia views biodiversity as a foundation of the nation's ecological, social, and economic resilience. Therefore, the protection, restoration, and sustainable use of biodiversity constitute an integral part of the national development agenda and the vision of Golden Indonesia 2045.

This report reflects Indonesia's progress in mainstreaming biodiversity into national development planning documents, expanding and improving the effectiveness of protected area management, strengthening the control of invasive alien species and pollution, enhancing resilience to climate change, and developing national indicator-based monitoring systems. Indonesia also continues to strengthen the framework for access and benefit-sharing, the management of genetic resources, and transparency in the private sector to support sustainable business practices, while recognizing the important contributions of indigenous peoples and local communities in biodiversity conservation and the sustainable use of biological resources.

In the global context, Indonesia remains committed to actively contributing to the achievement of the KMGBF targets, including expanding the coverage and improving the effectiveness of terrestrial and marine protected areas, mobilizing biodiversity finance, and strengthening synergies among multilateral environmental agreements. Indonesia also promotes approaches that are fair, inclusive, and science-based, while emphasizing the importance of international support through technology transfer, capacity-building, and adequate financial resources for developing countries.

The preparation of this report involved ministries and government agencies, local governments, academia, indigenous peoples and local communities, the private sector, and civil society organizations. This participatory approach reflects Indonesia's commitment to inclusive and meaningful governance in biodiversity management.

Moving forward, Indonesia will continue to strengthen regional and global cooperation and ensure that national implementation progresses in line with international commitments. We believe that strong collaboration among countries, sectors, and stakeholders is essential to halt and reverse biodiversity loss.

We express our sincere appreciation to all parties who have contributed to the preparation of this report. It is our hope that the Seventh National Report on the Implementation of the Convention on Biological Diversity will serve as a valuable reference for strengthening global partnerships toward a sustainable future for biodiversity.

Jakarta, 23 February 2026

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SECTION

Overview of the Preparation Process of Indonesia's Seventh National Report (NATREP 7)



Overview of the Preparation Process of Indonesia's Seventh National Report (NATREP 7)

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Indonesia ratified the Convention on Biological Diversity (CBD) through [Law No. 5/1994](#), reaffirming its commitment to the conservation and sustainable use of biodiversity and the fair and equitable sharing of benefits arising from genetic resources. These commitments were further reinforced with the adoption of the [Kunming–Montreal Global Biodiversity Framework](#) (KMGBF) under [Decision 15/4](#) at COP 15 in 2022, which establishes four global goals and 23 action targets to halt and reverse biodiversity loss by 2030 and to achieve the 2050 vision of Living in Harmony with Nature. The adoption of the KMGBF renewed global expectations for strengthening national biodiversity planning and reporting.

In response to [Decision 15/4](#) adopted at COP 15, Indonesia completed the preparation of the [Indonesia Biodiversity Strategy and Action Plan \(IBSAP\) 2025–2045](#) in 2024. This plan serves as the overarching framework for biodiversity governance and the implementation of the KMGBF in the country. The IBSAP aligns with Indonesia's Long-Term National Development Plan 2025–2045 ([Rencana Pembangunan Jangka Panjang Nasional/RPJPN](#)) and the Medium-Term National Development Plan 2025–2029 ([Rencana Pembangunan Jangka Menengah Nasional/RPJMN](#)), supporting Indonesia's long-term aspiration to achieve the 2045 Golden Indonesia vision. Therefore, the IBSAP provides the national policy context and the KMGBF-aligned target structure for interpreting and presenting the data and narrative in Indonesia's Seventh National Report (NATREP 7).

NATREP 7 covers the period from 2018 to June 2025, building on progress documented in [NATREP 6](#), which reported data up to 2017. The biodiversity actions reported during this period took place under different national planning contexts, starting with the final years of [IBSAP 2015–2020](#) and continuing through a transitional phase before the completion of the new strategy. To ensure consistency throughout the reporting period, all information from 2018 to June 2025 was reorganized and interpreted using the KMGBF and the overarching structure of the IBSAP 2025–2045. This approach provides a coherent narrative of progress and establishes a clear baseline for future monitoring and reporting cycles.

Institutional Arrangements and Stakeholder Engagement

The preparation of NATREP 7 was coordinated by the Ministry of Environment as the CBD National Focal Point, supported by a national technical team established through Decree of the Minister of Environment No. 1730/2025. The Technical Team comprised representatives from key line ministries, government agencies, and non-state actors, including civil society organizations (CSOs), private sectors, academia, and development partners. This coordination mechanism consists of a Steering Committee, a Technical Working Team, and a Core Drafting Team, which collectively guided cross-institutional coordination, data collection, stakeholder engagement, analysis, and validation throughout the reporting process.

The preparation of NATREP 7 adopted an inclusive, whole-of-government and whole-of-society approach. Engagement involved ministries and government agencies, local governments, and non-state actors, such as CSOs (including those working with customary and local communities), academia, private sectors, development partners, with specific efforts made to ensure the participation of youth and women, bringing together more than 500 stakeholders (**Figure 1.a**). This approach was consistent with CBD guidance and strengthened inclusive and participatory biodiversity governance in Indonesia.



Figure 1.a. Stakeholder Engagement in the Preparation of Indonesia's Seventh National Report

Ministries and government agencies served as the primary custodians of national biodiversity data, providing essential datasets for monitoring and reporting under the IBSAP 2025–2045 and the Kunming–Montreal Global Biodiversity Framework (KMGBF). Of the 154 technical units across 16 ministries and government agencies, 134 (87%) submitted data and supporting documents, reflecting strong engagement and coordination among stakeholders and institutions. Non-state actors, including CSOs, private sectors, and academia, also contributed actively through consultations and coordination meetings, although formal submissions represented a smaller proportion of inputs.

Inputs related to customary and local communities were gathered through targeted consultations and integrated into relevant national targets and indicators. These contributions were documented through the Workshop on Strengthening Traditional Knowledge and Local Wisdom, which involved representatives from seven major regions: Sumatra, Kalimantan, Java, Bali and Nusa Tenggara, Sulawesi, Maluku, and Papua. Additional insights were obtained through field visits to customary villages, supported by data from NGOs. This approach reflects the principles outlined in [CBD Decision 15/10](#) on Article 8(j).

Women played a central role in the development of NATREP 7, comprising 74% of the technical working team, and were actively involved in all consultation processes. A gender specialist supported the team to ensure that gender-responsive perspectives were consistently applied, and that the roles and contributions of women were clearly reflected in the report. NATREP 7 also highlights selected best practices led by women, demonstrating their contributions to biodiversity conservation and community stewardship.

Methodology and Reporting Process

Stakeholder engagement throughout the preparation process was guided by four core principles:

1. **Inclusivity:** Promoting broad representation across sectors, regions, and stakeholder groups, including women, youth, customary and local communities, persons with disabilities, to ensure that diverse knowledge systems and perspectives informed the reporting process.
2. **Transparency:** Ensuring clear documentation of methodologies and procedures, providing open channels for consultation and feedback, and facilitating visibility of revisions and decision-making processes among participating institutions and stakeholders.
3. **Accountability:** Establishing clear institutional responsibilities for each indicator and dataset, strengthening custodianship arrangements, and promoting shared ownership to enhance data accuracy, completeness, and follow-up actions.
4. **Evidence-based reporting:** Anchoring all inputs in verifiable data sources, credible documentation, and alignment with KMGBF headline indicators, ensuring that the report reflects measurable and substantiated progress.

Engagement activities under these principles included thematic workshops, technical consultations, and the use of digital data-collection platforms designed to align stakeholder contributions with national biodiversity targets. Steering Committee meetings and national-level consultations were also convened to review and validate compiled inputs, enabling the report to reflect a shared and well-substantiated account of Indonesia's progress.

The methodology for preparing NATREP 7 followed the sequence illustrated in **Figure 1.b**, which provides an overview of the major stages of the reporting process. To ensure consistency across inputs from diverse stakeholders, a standardized reporting template and guidance materials were distributed to clarify indicator definitions, evidence requirements, and alignment with the KMGBF. Coaching sessions were provided for ministries and agencies, provincial and regency/city governments, CSOs, and private sectors, enabling them to prepare data in a coherent format. Data were submitted through shared digital platforms, allowing real-time monitoring and clear documentation. The technical team conducted data validation and resolved gaps or inconsistencies in the submitted inputs. Validated inputs were subsequently synthesized by the Core Drafting Team into a coherent national narrative aligned with the KMGBF and IBSAP 2025–2045, and were reviewed and endorsed by the Steering Committee.

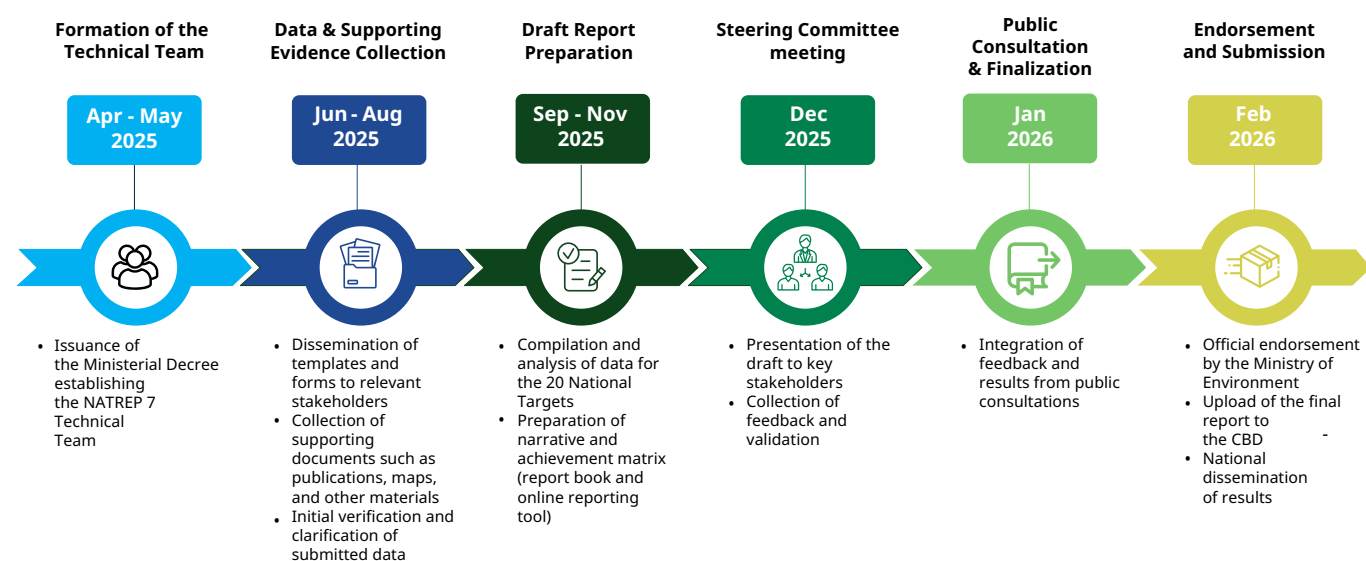


Figure 1.b. Preparation Timeline for Indonesia's Seventh National Report

Challenges and Lessons for Future Reporting

Throughout the preparation of NATREP 7, several challenges emerged that shaped the reporting process and highlighted areas for future strengthening.

First, the extended reporting period from 2018 to June 2025 coincided with institutional restructuring across several ministries and government agencies, affecting data custodianship and resulting in variations in how datasets were organized and maintained.

This, in turn, contributed to a second challenge: difficulties in data traceability, as certain datasets were not readily accessible or lacked complete documentation to support verification.

Third, NATREP 7 engaged a broader range of stakeholders than previous national reports to ensure the adoption of an inclusive, whole-of-government and whole-of-society approach. While this enhanced inclusivity and representation, it also required additional time for stakeholders to become familiar with the reporting framework and to build confidence in contributing. Extensive outreach efforts, including socialization and mainstreaming of the IBSAP 2025–2045 and the KMGBF, were therefore undertaken to promote a shared understanding of expectations and indicator structures.

Fourth, alignment between global and national target formulations and existing institutional mandates was not always straightforward. In some cases, indicators required interpretation beyond current institutional roles, for example, distinguishing between measuring the rate of establishment of invasive alien species and actions to control or mitigate them, or between assessing pesticide concentrations in the environment and documenting the promotion of organic farming practices.

Fifth, several available datasets did not yet fully meet the methodological requirements of KMGBF headline indicators, including continuity across years, standardized methodological approaches, and consistency in measurement units. Finally, the process highlighted the need to establish a formalized and coordinated data-sharing protocol across institutions to support future monitoring and reporting cycles and to ensure timely access to high-quality biodiversity data.



Key stakeholder engagement activities in the NATREP 7 preparation process

Overview of the event flow from start to finish





SECTION

Status of the Revised National Biodiversity Strategy and Action Plan in Alignment with the Kunming–Montreal Global Biodiversity Framework

Status of the Revised National Biodiversity Strategy and Action Plan in Alignment with the Kunming–Montreal Global Biodiversity Framework

Has your country revised or updated its national biodiversity strategy and action plan in alignment with the Framework?*

☒ Yes ☐ No ☐ In Progress

Did your country involve and engage stakeholders in revising or updating its national biodiversity strategy and action plan? *

☒ Yes ☐ No

Stakeholders *

Local and/or subnational government ☒ Indigenous peoples and local communities (IPLC) ☒
Private sector ☒ Women ☒ Youth ☒ Other ☒

Please specify other stakeholders *

Academia, Non-Government Organization, Media. Note: IPLC in the Indonesian context refer to customary and local communities

EN

Has your country's revised or updated national biodiversity strategy and action plan been adopted as a policy or a legal instrument, and/or integrated into other strategies? *

☐ Yes ☐ No ☒ In Progress

Revision, Alignment, and Institutional Adoption of IBSAP 2025–2045

The Indonesia Biodiversity Strategy and Action Plan (IBSAP) 2025–2045 serves as the overarching national framework for biodiversity governance, providing the strategic basis for monitoring and reporting under the Kunming–Montreal Global Biodiversity Framework (KMGBF). The IBSAP envisions “Living in harmony with nature for the continuity of all life forms in Indonesia,” reflecting Indonesia’s commitment to safeguarding biodiversity as a foundation for human well-being, ecological resilience, and sustainable development. This vision is implemented through a mission that emphasizes biodiversity protection, sustainable use, scientific advancement, and strengthened governance, and is further translated into coordinated national priorities and actions.

Anchored in five guiding principles of sovereignty, systematic and measurable management, fairness, participation, and prudence, the IBSAP 2025–2045 provides a comprehensive structure consisting of three goals, 13 strategies, 20 National Biodiversity Targets (NBTs), and 94 action groups (**Figure 2.a**). Each NBT is supported by specific indicators and associated action groups that mainstream biodiversity considerations across terrestrial, inland water, and marine ecosystems. Implementation responsibilities are shared among several ministries and government agencies, provincial and regency/city governments, academia, and non-state actors.

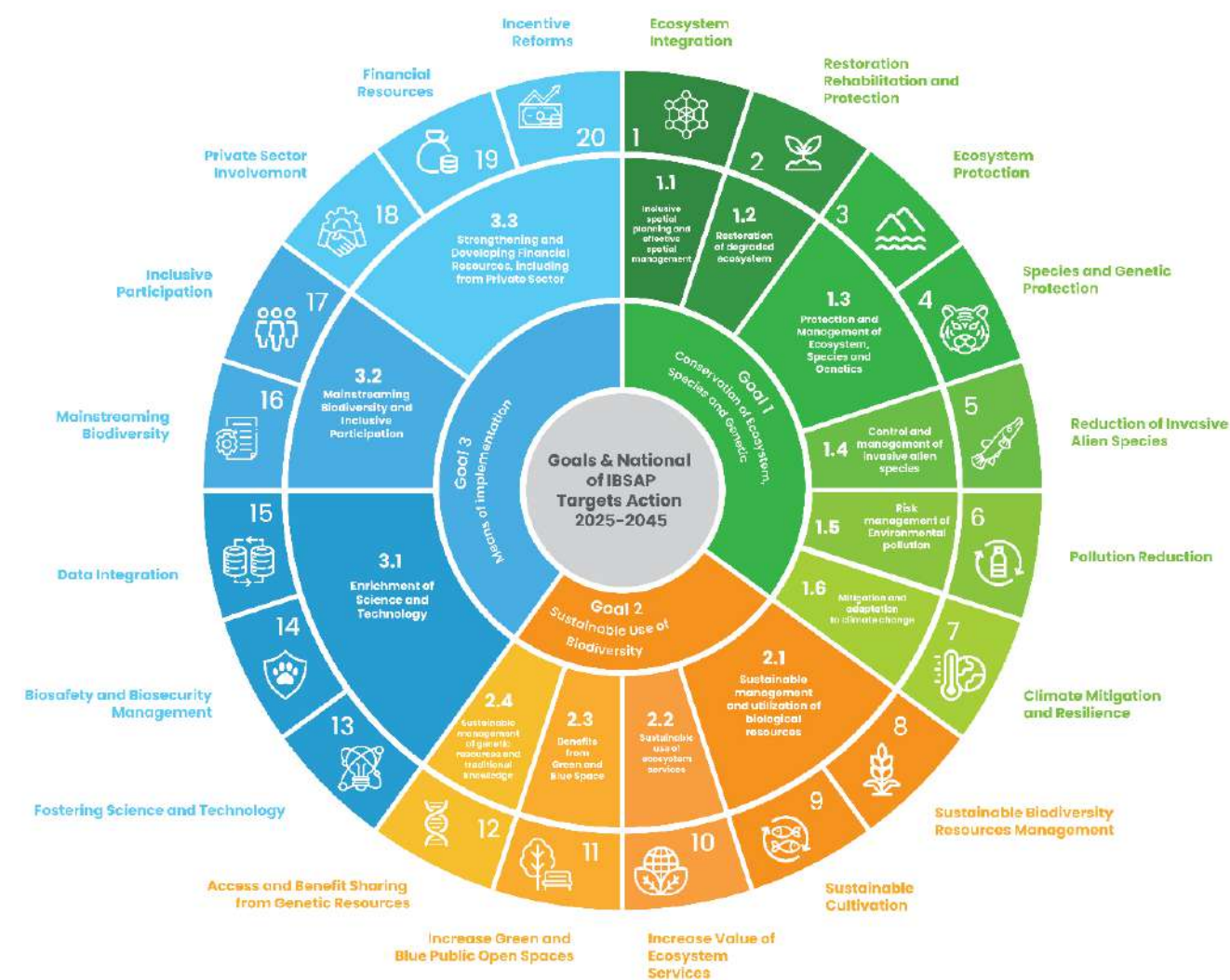


Figure 2.a. Indonesia's Biodiversity Strategy and Action Plan (IBSAP) 2025–2045 goals, strategies, and National Biodiversity Targets

National Biodiversity Monitoring System and Implementation Tracking

The monitoring and evaluation of IBSAP implementation are undertaken through an integrated national system, coordinated by the Ministry of Environment, which serves as Indonesia's CBD National Focal Point (NFP). As illustrated in **Figure 2.b**, the NFP oversees the overall process of data collection, verification, and monitoring, supported by a national technical team responsible for ensuring data quality and methodological consistency. A multi-ministerial Steering Committee provides strategy oversight and ensures alignment between biodiversity monitoring, national planning processes, and Indonesia's international commitments. This institutional architecture strengthens coordination across ministries, provincial and regency/city governments, academia, and non-state actors involved in biodiversity management.

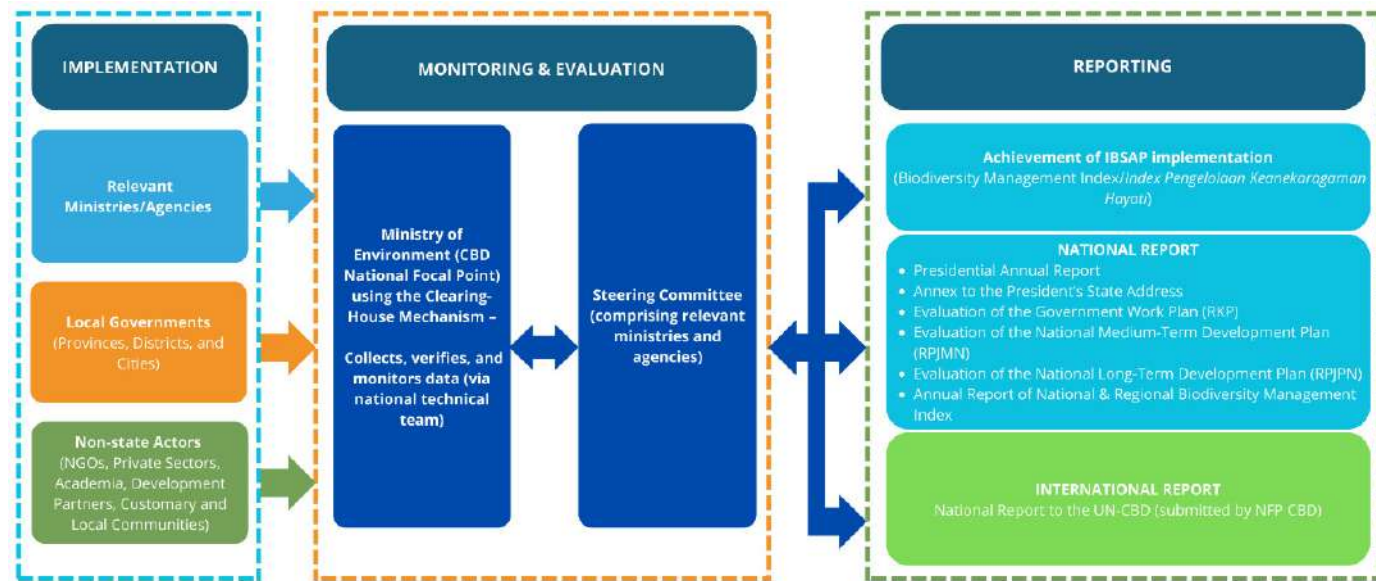


Figure 2.b. Institutional framework for monitoring, evaluation, and reporting of IBSAP implementation

Central to the monitoring system is the Indonesia Biodiversity Clearing House Mechanism (Balai Kliring Keanekaragaman Hayati Indonesia/BKKHI), which is being enhanced to function as an integrated national biodiversity information platform. As part of this enhancement, Indonesia is developing the Biodiversity Data Hub (*Rumah Data Keanekaragaman Hayati*) to consolidate datasets from different sectors, improve interoperability and transparency, and facilitate automated data flows into national and global reporting mechanisms. The BKKHI will serve as the central node linking monitoring results, evaluation processes, and reporting outputs, thereby promoting data consistency, accessibility, and institutional coordination.

To complement these institutional arrangements, Indonesia has introduced the Biodiversity Management Index (*Indeks Pengelolaan Keanekaragaman Hayati/IPK*), a performance-based tool designed to measure progress in biodiversity management across all IBSAP targets. The IPK aggregates variables aligned with NBT indicators and provides a unified metric to assess the effectiveness of actions to reduce biodiversity loss and promote sustainable use. Integrated within the national monitoring framework, the IPK supports evidence-based policy evaluation, adaptive management, and harmonized reporting under the Convention on Biological Diversity (CBD). The results of monitoring and evaluation are systematically integrated into national reporting instruments, including the Presidential Annual Report, evaluations of the National Medium-Term Development Plan (Rencana Pembangunan Jangka Menengah/RPJMN) and National Long-Term Development Plan (Rencana Pembangunan Jangka Panjang/RPJPN), as well as annual sectoral performance reports, and Indonesia's National Report to the CBD.



All photos © Ministry of National Development Planning/National Development Agency

The background is a vibrant, composite image of a tropical ecosystem. It features lush green mountains in the distance, a dense forest in the middle ground, and a clear blue coral reef with various sea life in the foreground. Overlaid on the right side is a large, dark green number '3'. To its right is a white rectangular box with a dark green border containing the section title. In the bottom left corner, there are small, detailed illustrations of a monkey, a toucan, and a butterfly.

3

SECTION

Assessment of Progress Towards National Biodiversity Targets

Assessment of Progress Towards National Biodiversity Targets

National Biodiversity Target	Current Level of Progress towards the Target	KMGBF Target Alignment
National Biodiversity Target 1. The integration of High Biodiversity Value Areas & Ecosystem Protection into Landscape and Seascape Spatial Planning	On track to achieve the target	GOAL A: Protect and Restore  Target 1 Plan and Manage all Areas To Reduce Biodiversity Loss
National Biodiversity Target 2. Enhancing Ecosystem Restoration, Rehabilitation, and Reclamation	On track to achieve the target	GOAL A: Protect and Restore  Target 2 Restore 30% of all Degraded Ecosystems
National Biodiversity Target 3. Protection and Effective Management of Protected Areas and High Biodiversity Value Areas in Terrestrial and Aquatic Ecosystems	On track to achieve the target	GOAL A: Protect and Restore  Target 3 Conserve 30% of Land, Waters and Seas
National Biodiversity Target 4. Protection and Preservation of Species and Genetic Diversity	On track to achieve the target	GOAL A: Protect and Restore  Target 4 Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts
National Biodiversity Target 5. Reducing the Introduction and Establishment of Invasive Alien Species	On track to achieve the target	GOAL A: Protect and Restore  Target 6 Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact
National Biodiversity Target 6. Reducing the risks and negative impacts of environmental pollution on biodiversity	On track to achieve the target	GOAL A: Protect and Restore  Target 7 Reduce Pollution to Levels That Are Not Harmful to Biodiversity
National Biodiversity Target 7. Reducing risks and enhancing biodiversity resilience to climate change impacts	On track to achieve the target	GOAL A: Protect and Restore  Target 8 Minimize the Impacts of Climate Change on Biodiversity and Build Resilience
National Biodiversity Target 8. Sustainable Use of Biological Resources for Community Well-Being	On track to achieve the target	Goal B: Prosper with Nature  Target 5 Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species  Target 9 Manage Wild Species Sustainably To Benefit People  Target 16 Enable Sustainable Consumption Choices To Reduce Waste and Overconsumption

National Biodiversity Target	Current Level of Progress towards the Target	KMGBF Target Alignment
National Biodiversity Target 9. Sustainable Silviculture, Agriculture and Aquaculture Practices	On track to achieve the target	Goal B: Prosper with Nature  Target 10 Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry
National Biodiversity Target 10. Sustainable Use of Ecosystem Services	On track to achieve the target	Goal B: Prosper with Nature  Target 11 Restore, Maintain and Enhance Nature's Contributions to People
National Biodiversity Target 11. Increasing the extent of Green and Blue Public Open Spaces in Urban Areas	On track to achieve the target	Goal B: Prosper with Nature  Target 12 Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity
National Biodiversity Target 12. Sustainable Use and Fair and Equitable Sharing of Benefits From the utilization of Genetic Resources and Traditional Knowledge	On track to achieve the target	Goal C: Share Benefits Fairly  Target 13 Increase the Sharing of Benefits From Genetic Resources, Digital Sequence Information and Traditional Knowledge
National Biodiversity Target 13. Enhancement and Transfer of Knowledge, Science, and Technology through Strengthened Research and Innovation Capacity	On track to achieve the target	Goal B: Prosper with Nature  Target 20 Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity
National Biodiversity Target 14. Strengthening Capacity for Biosafety Management	On track to achieve the target	Goal B: Prosper with Nature  Target 17 Strengthen Biosafety and Distribute the Benefits of Biotechnology
National Biodiversity Target 15. Strengthening Knowledge through the Integration of Biodiversity Data and Information	On track to achieve the target	Goal D: Invest and Collaborate  Target 21 Ensure That Knowledge Is Available and Accessible To Guide Biodiversity Action
National Biodiversity Target 16. Mainstreaming Biodiversity into National Development	On track to achieve the target	Goal D: Invest and Collaborate  Target 14 Integrate Biodiversity in Decision-Making at Every Level  Target 21 Ensure That Knowledge Is Available and Accessible To Guide Biodiversity Action

National Biodiversity Target	Current Level of Progress towards the Target	KMGBF Target Alignment
National Biodiversity Target 17. Inclusive Participation and Representation of Communities in Biodiversity Management	On track to achieve the target	Goal D: Invest and Collaborate  Target 22 Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all  Target 23 Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action
National Biodiversity Target 18. Enhancing Transparency of the Private and Financial Sectors in Biodiversity Management and Reducing Negative Impacts of Business Operations on Biodiversity	On track to achieve the target	Goal D: Invest and Collaborate  Target 15 Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts
National Biodiversity Target 19. Substantive and Progressive Increase in Financial Support for the Effective, Efficient, and Transparent Implementation of IBSAP	On track to achieve the target	Goal D: Invest and Collaborate  Target 19 Mobilize \$200 Billion per Year for Biodiversity From all Sources, Including \$30 Billion Through International Finance
National Biodiversity Target 20. Incentive Reform to Support Biodiversity Management	On track to achieve the target	Goal D: Invest and Collaborate  Target 18 Reduce Harmful Incentives by at Least \$500 Billion per Year, and Scale Up Positive Incentives for Biodiversity



Kunming–Montreal

GLOBAL BIODIVERSITY FRAMEWORK



National Biodiversity Target 1

The integration of High Biodiversity Value Areas & Ecosystem Protection into Landscape and Seascape Spatial Planning



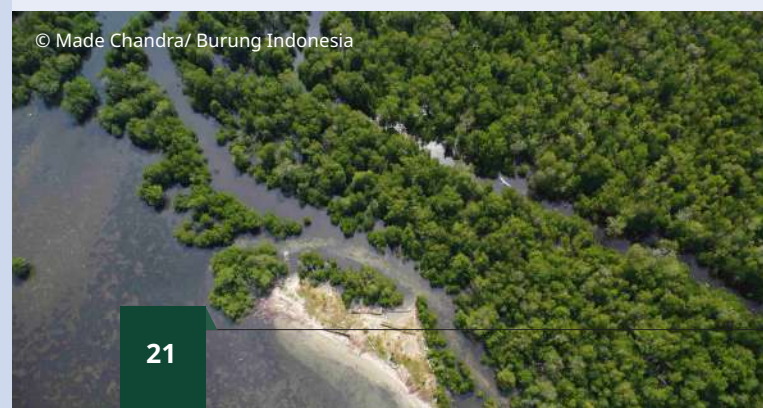
KMGBF GOAL A

Protect and Restore

Sustainable Development Goals



KMGBF Target 1



National Biodiversity Target 1



Main actions taken to implement the target

National Biodiversity Target 1 aims to integrate high-biodiversity-value areas and ecosystem protection into landscape and seascape spatial planning. Under the IBSAP 2025–2045, these efforts are organized into ten action groups, as follows:

- 1.1 Identification of areas with high biodiversity value and assessment of ecosystem status;
- 1.2 Planning of protected forest and land, coastal and marine, and geological areas;
- 1.3 Preservation Area Planning in cultivation areas for conservation efforts and maintaining ecosystem functions;
- 1.4 Integration of landscape and seascape spatial planning;
- 1.5 Planning of traditional, customary and local community areas as protected functions on spatial planning;
- 1.6 Spatial planning in the National Strategic Area from the perspective of environmental function and carrying capacity;
- 1.7 Improving the quality of spatial planning implementation by considering biodiversity values;
- 1.8 Monitoring and control of spatial planning implementation;
- 1.9 Law enforcement for violation of spatial planning implementation; and
- 1.10 Forest cover management.



Summary of progress towards the target, including the main outcomes achieved

Spatial planning in Indonesia is regulated by Government Regulations that establish policies and strategies for the development, utilization, and management of protected areas, cultivation areas, and national strategic areas. The protection of areas of high biodiversity value is implemented through the integration of biodiversity conservation objectives across sectors within the framework of the National Spatial Planning system (*Rencana Tata Ruang/RTR*). To ensure alignment between spatial planning and environmentally sustainable development, *Strategic Environmental Assessment (Kajian Lingkungan Hidup Strategis/KLHS)* is conducted as part of national and local spatial planning processes. This assessment ensures that policies and plans take into account environmental carrying capacity and environmental capacity, as well as biodiversity protection.

Significant progress has been made in integrating high-biodiversity areas into comprehensive terrestrial and marine spatial planning. Biodiversity-rich and high conservation value areas, including forest cover, peatlands, mangroves, karst areas (*Kawasan Bentang Alam Karst/KBAK*), and both terrestrial and marine protected areas, have been systematically incorporated into Regional Spatial Plans (*Rencana Tata Ruang Wilayah/RTRW*), Coastal and Small Islands Zoning Plans (*Rencana Zonasi Wilayah Pesisir dan Pulau-pulau Kecil/RZWP3K*), and Strategic Environmental Assessments (KLHS) under the *One Map Policy*. The One Map Policy has strengthened spatial data consistency, enabling more coordinated decision-making across sectors at both national and subnational levels.

In marine areas, Coastal and Small Islands Zoning Plans (RZWP3K) include biodiversity-rich zones such as coral reefs, mangroves, seagrass beds, and key habitats for marine species. This integration supports the expansion of Marine Protected Areas (MPAs), contributing to Indonesia's national target of protecting 10% of its marine waters (~32.5 million ha) by 2030 and 30% by 2045 as a contribution to global Target 3.

The designation of high biodiversity value areas outside designated conservation areas enables the safeguarding of important ecosystems through multi-stakeholder governance that engages non-state actors, including the private sector and local governments. Indonesia's commitment is further demonstrated through the enactment of the Preservation Area Policy, as stipulated in [Law No. 32/2024](#), which aligns with the concept of Other Effective Area-based Conservation Measures (OECMs). This provides legal certainty and strengthens the integrated and sustainable management of important ecosystems.

The stakeholders that support the achievement of this target are the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (KemenATR/BPN), the Ministry of Energy and Mineral Resources (Kemen ESDM), the Ministry of Public Works (Kemen PU), the Ministry of Home Affairs (Kemendagri), the Geospatial Information Agency (BIG), the National Research and Innovation Agency (BRIN), and Local Governments (Provincial and City/Regency), along with the involvement of non-state actors, such as Yayasan Kehati and Forum Komunikasi Kehutanan Masyarakat.

Main Outcomes Achieved

This target has three related headline indicators (A.1, A.2, and 1.1). Headline Indicator A.1 is not yet applicable, as Indonesia is still in the process of systematically identifying and classifying its natural ecosystems across the archipelago (see National Indicator 1.a). The same situation applies to Headline Indicator A.2 on the extent of natural ecosystems. An additional in-depth analysis is needed to determine which ecosystem types can be classified as the extent of natural ecosystems for reporting purposes.

Headline Indicator 1.1 – Percentage of land and sea area covered by biodiversity-inclusive spatial plans

Indonesia has achieved full spatial planning coverage (100%), with all terrestrial and marine areas incorporated within the National Spatial Planning (RTR). This system integrates biodiversity protection zones and is implemented in a cascading manner from the national level down to provincial and district jurisdictions, ensuring coherence across government levels.

To further enhance transparency and coordination, Indonesia is developing [Protaru](#), an online spatial planning platform designed to provide accessible spatial information. The platform aims to strengthen cross-sector coordination, minimize overlapping land uses, and support informed and timely decision-making.

Indonesia has had an Ecoregion Map since 2018, which was subsequently complemented by the Map of Natural Landscape Characteristics (**Figure 1.1**) and the Map of Natural Vegetation Characteristics of Indonesia's Ecoregions (**Figure 1.2**). These maps serve as key references for implementing a wide range of environmental governance instruments and planning processes. The Natural Vegetation Characteristics Map is developed in an indicative format, providing a strategic overview of potential natural vegetation distribution at the national scale. The Map of Natural Landscape Characteristics represents, in an indicative manner, the types of morphology and morphogenesis in Indonesia.

The maps provide the foundational basis for environmental inventory and detailed ecoregion mapping, assessment of environmental carrying capacity and environmental capacity thresholds, evaluation of environmental functions and ecosystem services, planning for environmental protection and management, environmental impact-related assessments including Strategic Environmental Assessment (KLHS) and Environmental Impact Assessment (*Analisis Dampak Lingkungan/AMDAL*), application of environmental economic instruments, natural resource management, assessment and management of essential ecosystem areas, disaster risk assessment, and climate change adaptation and resilience studies; through these instruments, the ecoregion-based mapping framework ensures that environmental considerations are systematically integrated into development planning and sectoral decision-making across national and subnational levels.



Figure 1.1. Map of Natural Landscape Characteristics



Figure 1.2. Map of Natural Vegetation Characteristics of Indonesia's Ecoregions

National Indicator 1.a – Extent of natural ecosystems on land, in inland waters, and in coastal and marine areas that have been identified and mapped

The diversity of natural ecosystems in Indonesia is classified into 22 major ecosystem types (Table 1.1), ranging from deep-water marine ecosystems to nival zones at elevations of around 4,000 m above sea level (m asl). As an archipelagic country, Indonesia’s islands exhibit wide ecological variability, shaped by differences in climate, geology, and soil conditions.

Several ecosystem types are widespread throughout the archipelago, including coastal ecosystems, mangroves, lakes, rivers, and montane systems. Other ecosystems are more regionally concentrated, such as dipterocarp forests and peatlands, which are predominantly found in Sumatra and Kalimantan.

Table 1.1. Natural Ecosystem Types across Indonesia

Realm	Ecosystem Type
Marine	Neritic zone, oceanic zone, seagrass, coral reef
Limnic	River, lake
Semi-Terrestrial	Riparian, mangrove
Terrestrial	Coastal forest, dipterocarp forest, heath forest, swamp forest, peat swamp forest, karst, savanna, meadow, ultrabasic forest, lower mountain forest, sub-alpine, alpine

Of these 22 ecosystem types, eight natural ecosystems have been systematically identified and mapped at the national scale (Figure 1.3), providing an important reference for conservation planning and ecosystem management.



Figure 1.3. Area of Natural Ecosystems in Indonesia (data up to 2024)

An effort to identify and map all 22 ecosystem types has been undertaken across 573 terrestrial conservation areas, covering approximately 27 million ha (Figure 1.4). Lowland forest ecosystems constitute the largest proportion, accounting for approximately 6.81 million ha (24.8%), followed by dipterocarp forests at approximately 2.98 million ha (10.9%). By comparison, coastal ecosystems represent the smallest area, approximately 20.93 thousand ha (0.07%), although they are distributed across regions. Alpine ecosystems cover around 52.94 thousand ha (0.19%) of the total conservation area and are limited to elevations above 3000 m asl.

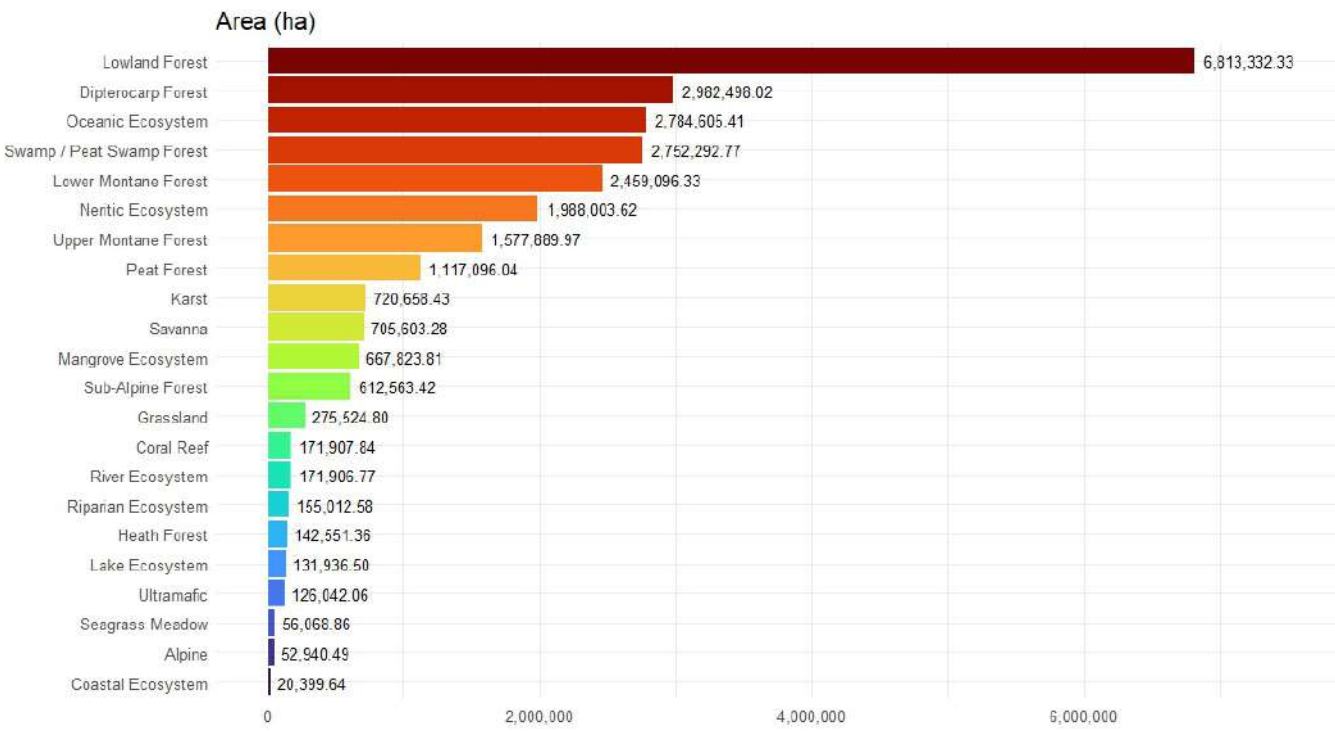


Figure 1.4. Area of natural ecosystem types within conservation areas in Indonesia (Directorate of Conservation Planning, Ministry of Forestry)

In 2025, Indonesia also released an updated coverage and map of shallow marine benthic habitats, approximately 2.27 million ha (Figure 1.5). These include seabed substrates (777,436 ha), coral reef ecosystems (838,615 ha), sea grass meadows (660,156 ha), and macroalgal communities (3,148 ha), further strengthening the national baseline for marine ecosystem assessment and management.



Figure 1.5. Map of shallow marine benthic habitats across the Indonesian archipelagic islands.

National Indicator 1.b – Indicative area of high biodiversity value on landscape and seascape retained for protected functions within spatial planning

Indonesia has identified high-biodiversity-value areas within and outside conservation areas. The main criteria used are:

- protected flora and fauna species,
- endemic species,
- threatened species based on the IUCN Red List,
- across seven terrestrial ecoregions: Sumatra, Kalimantan, Sulawesi, Java, Bali and Nusa Tenggara, Maluku, and Papua.
- During the period 2020–2024, Indonesia has successfully mapped 93.2 million ha of high biodiversity value terrestrial areas, of which 77.47 million ha are located outside conservation areas, distributed as:
 - 43.51 million ha in production forests,
 - 20.91 million ha in protected forests, and
 - 12.95 million ha in Other Land Uses (*Area Penggunaan Lain/APL*).

For areas outside designated conservation areas, different criteria are applied, including land cover, water resources, and the presence of wildlife species. In total, Indonesia has identified and verified almost 43 million ha of high-biodiversity areas outside designated conservation areas, with annual progress presented in **Table 1.2**.

Table 1.2. Area of High-Biodiversity Value Outside Conservation Areas Identified and Verified by Year

Year	Area Identified and verified (ha)
2020	6,663,291.97
2021	8,932,059.61
2022	8,059,968.27
2023	15,611,293.10
2024	9,953,269.34

Among these high-biodiversity areas, Indonesia has identified 487 Key Biodiversity Areas (KBA) and 228 Important Bird Areas (IBA) across Sumatra, Kalimantan, Java, Bali, Sulawesi, Nusa Tenggara, and Maluku, as well as 59 potential IBAs in Papua.

In parallel with terrestrial ecosystems, high-biodiversity-value marine areas are also identified, protected, and managed sustainably, particularly within marine spatial planning frameworks. Special emphasis is placed on coral reefs, seagrass meadows, and mangroves, especially those located within marine protected areas, to ensure that conservation objectives are integrated into national spatial planning.

These three key ecosystems have been subject to sustained protection efforts within areas formally designated, reserved, and/or allocated under the Coastal and Small Islands Zoning Plans (*Rencana Zonasi Wilayah Pesisir dan Pulau-pulau Kecil/RZWP3K*). This integrated spatial approach helps to ensure that conservation objectives are embedded within broader marine governance and development planning processes.

In addition, the Government of Indonesia has developed and published a national distribution map covering 21 protected marine species across the archipelago (**Figure 1.6**). This initiative directly contributes to achieving national indicator 1.b under the IBSAP by strengthening the scientific foundation for integrated spatial planning and biodiversity-based management.

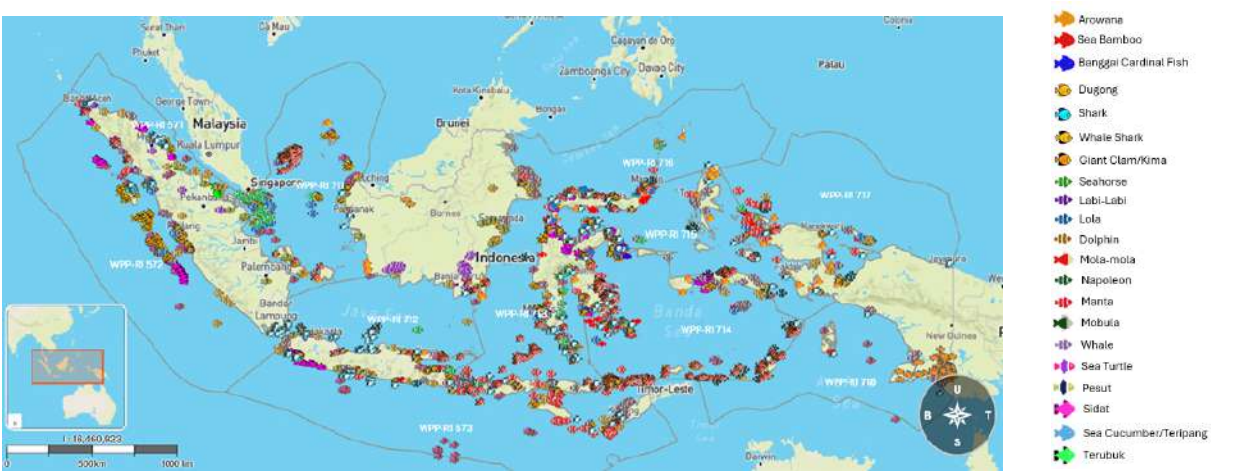


Figure 1.6. Distribution map of the marine protected species across the archipelago (Ministry of Marine Affairs and Fisheries, 2026)

Non-state actors have also contributed to implementing this indicator by collaborating with local governments and communities to protect habitats of important species. In 2024, these efforts included the protection of the upper Mahakam River area by the Kutai Kartanegara Regency Government, which was subsequently designated as a Marine Protected Area (MPA). In addition, the development of the Geopark Master Plan for the Sangkulirang–Mangkalihat Karst Ecosystem has provided a strategic framework for safeguarding approximately 171,927.57 ha.

National Indicator 1.c – Percentage of total area covered by National Spatial Planning that have been validated through Strategic Environmental Assessment

Indonesia is currently developing a [Strategic Environmental Assessment \(KLHS\) Information System](#), a digital platform designed to integrate data and information for the preparation, implementation, and validation of KLHS nationwide. The system supports local governments, stakeholders, and the public in understanding and managing the environmental impacts of various development plans (**Figure 1.7**). Of the 506 regencies/cities in Indonesia, 60% (307) have completed and validated their Strategic Environmental Assessments (KLHS).

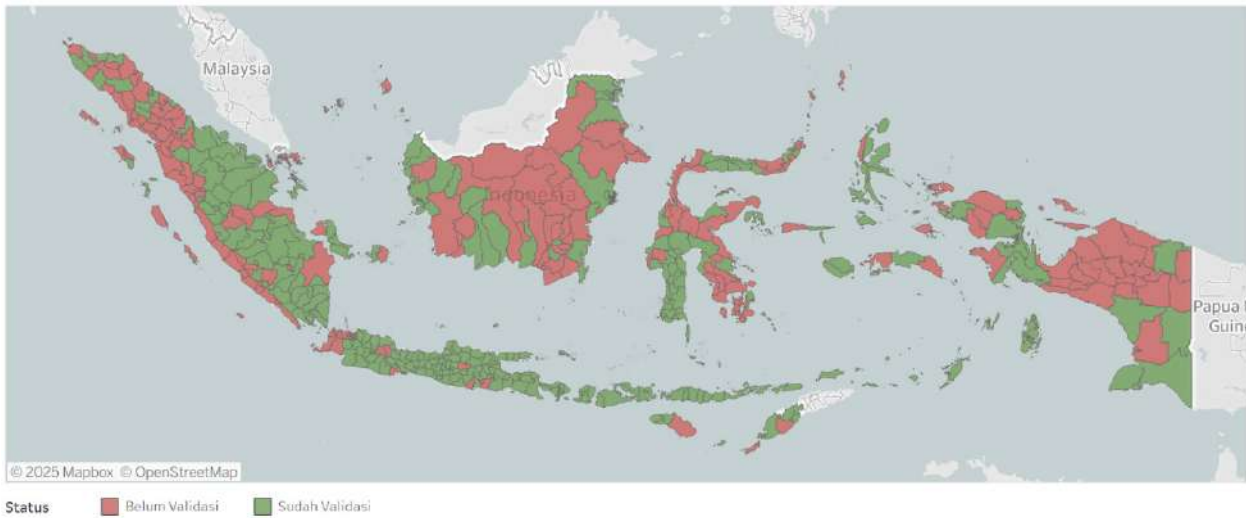


Figure 1.7. Distribution of Strategic Environmental Assessment (KLHS) status across regencies/cities: red: validated, and green: not yet validated

National Indicator 1.d – Extent of high biodiversity value areas for which the ecosystem threat status has been identified

This indicator represents a long-term milestone for conducting assessments of ecosystem vulnerability. As of 2025, available data indicate that assessments of ecosystem health have been conducted and published in scientific journals. These include site-specific evaluations such as riparian ecological assessments for specific river ([Enhancing River Sustainability: A Comprehensive Approach to Riparian Ecology Assessment | SpringerLink](#)), reef health index in 2023 ([The reef health index for coral reefs management in Indonesia](#)), and the identification of Important Plant Areas (IPA) on Mursala Island in 2024 ([Ecosystem red listing and identification of Mursala Island as the first important plant area in Indonesia - ScienceDirect](#)).

Complementing these targeted assessments, Indonesia published the Marine Health Index Report ([Indonesian Marine Health Index \(IKLI\) – 2022 - Indonesian Conservation](#)). The report presents a comprehensive assessment of Indonesia’s marine ecosystem health and socio-economic benefits derived from coastal and ocean resources. Using a modified version of the global Ocean Health Index (OHI) tailored to Indonesia’s context, the study evaluates multiple dimensions, such as food provision, traditional fisheries livelihood, natural products, coastal protection, biodiversity, water quality, and recreational value, across marine and coastal zones. By quantifying both status and trends, the report establishes an important baseline to inform policy formulation, marine spatial planning, and sustainable marine resource management.

Within this broader framework, the Coral Reef Health Index (**Figure 1.8**) recorded an average score of 5 (on a scale of 1–10) in 2021, indicating moderate coral cover, with recovery potential and reef fish availability varying across sites from low to high. This score has remained stable since 2014, suggesting that a significant decline has largely been avoided. At the same time, the lack of measurable improvement underscores the need to further strengthen conservation, restoration, and adaptive management efforts to enhance reef resilience and deliver tangible ecological progress.

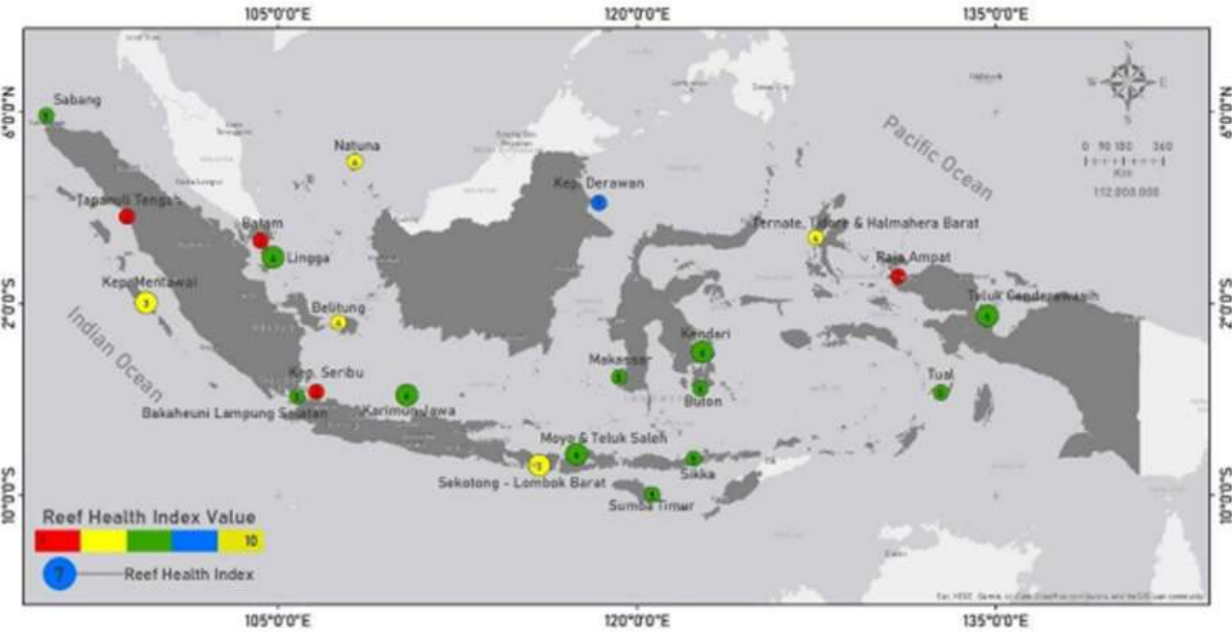


Figure 1.8. The Coral Reef Health Index was recorded in 2021.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Despite significant progress in achieving national spatial planning coverage, several challenges remain, including:

1. The need for more integrated land–sea spatial planning
Indonesia has a unique geographic characteristic as an archipelagic State. This condition constitutes a strategic advantage, as it underpins the country’s exceptionally high biodiversity, while simultaneously posing challenges to the effective integration of spatial planning at the local level. In response, the Government of Indonesia has undertaken harmonization efforts at the national, provincial, and district levels, including alignment with relevant sectors, to avoid spatial fragmentation. The incorporation of marine spatial plans into terrestrial spatial planning frameworks, including inland waters, supported by mandatory Strategic Environmental Assessments, has further strengthened the application of biodiversity safeguards across development sectors and enhanced overall coherence in land–seascape planning.
2. Conflicts in spatial use (differences in spatial use priorities)
It is acknowledged that conflicts in spatial use persist, including those arising from economic activities. To address these challenges, Indonesia continues to apply environmental and social safeguards. The implementation of the High Conservation Value (HCV) approach, alongside the scaling up of social forestry initiatives, aims to balance development objectives while reducing competing pressures and tensions in land-use allocation.
3. Technical and financial capacity
Persistent cloud cover over much of the Indonesian archipelago poses a significant constraint on the acquisition of accurate, consistent spatial data. This challenge is compounded by limitations in the number and capacity of field personnel available to undertake verification and ground-truthing activities nationwide. To address these constraints, the Government continues to strengthen institutional capacity through targeted training on methodologies and emerging technologies, as well as by enhancing collaboration with academic institutions and technical experts.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

The Strengthening Forest Area Planning and Management in Kalimantan (KalFOR) Project.

The KalFor Project is a collaborative initiative led by the Government of Indonesia’s Ministry of Environment and Forestry (KLHK), supported by the United Nations Development Programme (UNDP), and funded by the Global Environment Facility (GEF). Its primary aim is to maintain and protect forest areas in Kalimantan, especially those Outside State Forest Area (Areal Penggunaan Lain/APL), by integrating biodiversity conservation, sustainable land-use planning, and ecosystem management into national and subnational decision-making processes. The APL is an area for non-forestry sector development, such as plantation, agriculture, settlement, infrastructure, etc.

The project addresses the challenge of forest loss and habitat degradation caused by those activities, which threaten biodiversity, carbon stocks, and ecosystem services. KalFor works to balance economic development with conservation by improving forest area planning and management frameworks, strengthening institutional capacity, and removing policy and regulatory barriers at national, provincial, and landscape levels.

This project successfully engaged local governments in initiating protection measures within APL. The local government at the provincial and district levels has been notably strong in supporting forest protection initiatives, particularly in areas facing significant pressure from land-use changes, such as plantation and mining.



As a result of the regulations developed, a total of 665,871 ha of forest in APL areas across the three provinces, of which 573,547 ha are classified as High Conservation Value Forests, have been brought under protection. This achievement exceeds the project's end target of 500,000 ha.

Indicator Data

Headline Indicator A.1 Red List of Ecosystems

- No data available
- Headline Indicator A.1 is not yet applicable, as Indonesia is currently in the process of identifying and classifying its natural ecosystems. Despite this, Indonesia has made substantial progress toward Goal A overall by expanding the coverage and effectiveness of protected and conserved areas, strengthening conservation efforts for species and genetic diversity, and establishing robust legal and institutional frameworks for biodiversity management. Conservation and preservation areas now cover more than 52 million ha across terrestrial and marine ecosystems, supported by improved management effectiveness and recognition of Other Effective Area-Based Conservation Measures (OECMs). Targeted species conservation actions, the advancement of national Red List Assessments, strengthened genetic resource conservation, and reinforced invasive alien species management collectively demonstrate Indonesia’s commitment to halting biodiversity loss, while building a strong foundation for achieving Goal A by 2030.

Indonesia has significantly expanded ecosystem conservation through the designation of protected areas and preservation areas, which are equivalent to OECMs. As of 2024, conservation coverage across terrestrial and marine ecosystems reached approximately 52.3 million ha. This expansion is reinforced by Law No. 32/2024, which formally recognizes conservation beyond designated protected areas, including ecological corridors, High Conservation Value (HCV) areas, and community-managed landscapes. The management effectiveness is strengthened through the regular application of the Management Effectiveness Tracking Tool (METT) and the Evaluation of Conservation Area Management Effectiveness (*Evaluasi Efektivitas Pengelolaan Kawasan Konservasi/EVIKA*), which support adaptive and accountable ecosystem governance.

Invasive Alien Species (IAS) management represents another key achievement contributing to Goal A. Indonesia has established a robust legal and institutional framework for prevention, risk analysis, and control, supported by quarantine laws and risk-based species assessments. By 2024, 34 priority plant IAS had been identified for management, with ecosystem restoration actions implemented in several national parks. For aquatic biota, six harmful and 75 detrimental fish species have been designated and prioritized for control to prevent their spread. While data gaps remain for comprehensive trend analysis, these measures demonstrate concrete progress in reducing pressures on native ecosystems and species.

Headline Indicator A.2 Extent of natural ecosystems

- No data available
- For Indicator A.2, Indonesia requires an in-depth analysis to determine which ecosystem types can be classified as natural ecosystems for reporting purposes. This is particularly important due to differences between the definition adopted in national regulations and the interpretation applied at the global level. Under Indonesia’s prevailing legal framework, ecosystems resulting from rehabilitation or restoration are generally not categorized as natural ecosystems, whereas the global interpretation of the indicator may accommodate restored ecosystems within the broader definition of natural ecosystems. This definitional divergence affects the scope and calculation of the indicator and, at this stage, has constrained Indonesia’s ability to fully align with its reporting requirements.

Headline Indicator 1.1 Percentage of land and sea area covered by biodiversity-inclusive spatial plans

Use national data set

Indicator	Year	Unit	Value	Footnote
1.1 Percentage of land and sea area covered by biodiversity-inclusive spatial plans	2025	Percent	100	
	2024	Percent	100	
	2023	Percent	100	
	2022	Percent	100	
	2021	Percent	100	
	2020	Percent	100	
	2019	Percent	100	
	2018	Percent	100	

Binary Indicator 1.b Number of countries using participatory, integrated, and biodiversity-inclusive spatial planning and/or effective management processes addressing land- and sea-use change to bring the loss of areas of high biodiversity importance close to zero by 2030

1 Is your country landlocked?

No

1.1 Are all areas of your country covered by biodiversity-inclusive spatial planning or effective management processes that:

(a) Address land-use changes in terrestrial areas?

Fully

(b) Address land-use changes in inland water ecosystems?

Fully

(c) Address sea-use changes in coastal and marine areas?

(This question is considered not applicable to landlocked States.)

Fully

1.2 If the answer to any of the questions in 1.1 is not “No”, were the plans developed using a participatory process? (Select all that apply; if the country is landlocked, marine spatial planning is considered not relevant.)

- For terrestrial spatial planning
- For inland water spatial planning
- For coastal and marine spatial planning

National Indicator 1.a Extent of natural ecosystems on land, in inland waters, and in coastal and marine areas that have been identified and mapped

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
1.a Extent of natural ecosystems on land, in inland waters, and in coastal and marine areas that have been identified and mapped	Ecosystem	Seagrass Ecosystem	2025	ha	660,156	Cumulative, published on 2025
		Seabed substrates	2025	ha	777,436	
		Karst Ecosystem	2024	ha	354,216.8	
		Lake Ecosystem	2024	ha	523,388	
		Heath Forest	2024	ha	767,200	
		Coral Reef Ecosystem	2024	ha	2,500,000	
		Mangrove Ecosystem	2024	ha	3,364,080	
		Savanna Ecosystem	2024	ha	10,275,300	
		Peat Forest Ecosystem	2024	ha	13,430,517	

National Indicator 1.b Indicative area of high biodiversity value on landscape and seascape retained for protected functions within spatial planning

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
1.b Indicative area of high biodiversity value on landscape and seascape retained for protected functions within spatial planning	Type of conservation	Conservation area	2024	ha	15,730,000	
		Outside the conservation area	2024	ha	77,470,000	

National Indicator 1.c Percentage of total area covered by National Spatial Planning that have been validated through Strategic Environmental Assessment

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
1.c Percentage of total area covered by National Spatial Planning that have been validated through Strategic Environmental Assessment	Validation	Validated by KLHS	2025	percent	60	
		Not yet validated by KLHS	2025	percent	40	

National Indicator 1.d Extent of high biodiversity value areas for which the ecosystem threat status has been identified

- No data available
- This indicator represents a long-term milestone for conducting assessments of ecosystem vulnerability.

National Biodiversity Target 2

Enhancing Ecosystem Restoration, Rehabilitation, and Reclamation



KMGBF GOAL A

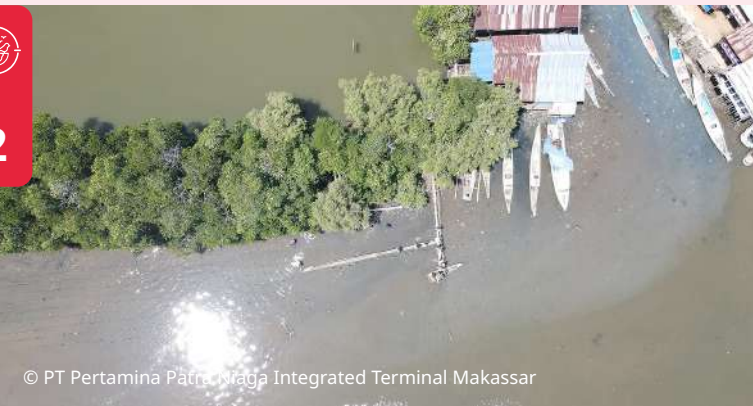
Protect and Restore



KMGBF Target 2



Sustainable Development Goals



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Main actions taken to implement the target

Implementation of National Biodiversity Target 2 focuses on enhancing ecosystem restoration, rehabilitation, and reclamation. Under the IBSAP 2025–2045, these efforts are organized into two action groups, as follows:

- 2.1 To increase the restoration of degraded terrestrial, inland waters, coastal and small islands, and marine ecosystems; and
- 2.2 To enhance the effectiveness of terrestrial, inland waters, coastal and small islands, and marine ecosystems restoration.



Summary of progress towards the target, including the main outcomes achieved

Indonesia has undertaken a range of strategic measures to support ecosystem restoration, underpinned by a robust legal and policy framework that provides a strong foundation for implementation. Key instruments include [Law No. 41/1999](#) on Forestry, which governs the sustainable management, utilization, and protection of forest areas, and [Law No. 32/2009](#) on Environmental Protection and Management, which affirms the responsibilities of national and subnational governments and society in safeguarding environmental sustainability and biodiversity conservation.

As a result of the implementation of rehabilitation policies and programs, Indonesia has achieved a significant reduction in degraded land over the past two decades. National data indicate that the extent of degraded land decreased from 30.19 million ha in 2006 to 13.36 million ha in 2018, and further to 12,744,925 ha in 2022, comprising 7,410,751 ha within forest areas and 5,334,174 ha outside forest areas.

Based on the 2022 Critical Land Map, more than 12 million ha of critical land have been identified as priority areas for ecosystem restoration. Through the implementation of the Forest and Land Rehabilitation (*Rehabilitasi Hutan dan Lahan/RHL*) Program, the Government has achieved notable progress. During the period 2018–2024, a total of 1,562,109 ha were rehabilitated, covering efforts both within and outside forest areas ([Ministry of Forestry Statistics 2024](#))

Indonesia also places strong emphasis on the restoration of mangrove and peatland ecosystems, recognizing their critical role in maintaining ecosystem balance, enhancing coastal resilience, and supporting climate change mitigation. As of 2025, the total area of rehabilitated mangrove ecosystems in Indonesia amounts to 141,152 ha. Of this total, 85,505 ha were rehabilitated through various government-led programs implemented during the period 2020–2025, while 56,089 ha were restored under the Mangrove Rehabilitation Acceleration Program financed by the National Economic Recovery (*Pemulihan Ekonomi Nasional/PEN*) Program in 2021 and the Mangrove for Coastal Resilience (M4CR) Program in 2024.

To strengthen mangrove rehabilitation programs, Indonesia has developed the National Mangrove Rehabilitation Roadmap 2021–2030, which sets a target of rehabilitating 600,000 ha. The roadmap outlines site-level implementation strategies through the “3M” approach, which includes: (i) restoring degraded mangrove ecosystems (potential mangrove habitats) through intensive planting schemes; (ii) improving degraded mangrove ecosystems through enrichment planting and species diversification; and (iii) maintaining mangrove ecosystems that remain in good condition. Indonesia has also undertaken restoration initiatives in marine environments, particularly coral reef ecosystem restoration carried out by the Ministry of Marine Affairs and Fisheries (KKP) and the Ministry of Environment and Forestry (KLHK) up to 2024, covering a total restored area of 78.06 ha.

Indonesia continues to accelerate the restoration of peatland ecosystems as one of the key ecosystems for carbon emission control and water resource management. From 2016 to 2024, a total of 5,987,215 ha

of peatland ecosystems were restored, implemented by the Peatland and Mangrove Restoration Agency (*Badan Restorasi Gambut dan Mangrove/BRGM*) and the [Ministry of Environment and Forestry](#). This achievement reflects a strong collaborative effort among government institutions, local communities, and development partners through the implementation of hydrological restoration, revegetation, and community livelihood revitalization activities in peatlands.

Non-State Actors (NSAs), including civil society organizations and the private sector, contribute significantly to National Target 2 through ecosystem restoration, rehabilitation, and reclamation initiatives across terrestrial, freshwater, and marine ecosystems. Civil society organizations support forest and peatland restoration through rewetting and revegetation, mangrove and coral reef rehabilitation, grassland recovery, and community-based restoration within social forestry schemes and conservation areas, often integrating sustainable livelihood approaches and local participation. Meanwhile, the private sector implements ecosystem restoration and rehabilitation within concession areas, peatlands, watersheds, coastal zones, small islands, and post-mining sites in line with regulatory obligations and sustainability commitments. These efforts include critical land rehabilitation, reclamation of degraded areas, mangrove and coastal vegetation restoration, coral reef recovery, and biodiversity conservation partnerships.

Stakeholders contribute to this target, including the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Energy and Mineral Resources (KemenESDM), the Ministry of Public Works (KemenPU), the Ministry of Transportation (Kemenhub), the National Research and Innovation Agency (BRIN), and Local Governments (Provincial and City/Regency). Non-state actors that provided supporting data and information for this report include: Belantara Foundation, Konservasi Indonesia, Perkumpulan Sawit Watch, Yayasan Kehati, Yayasan Lahan Basah, Yayasan Inisiasi Alam Rehabilitasi Indonesia, Forum Komunikasi Kehutanan Masyarakat, Yayasan Borneo Nature Indonesia, PT. Astra Agro Lestari Tbk, PT. Tah Sung Hung, PT. Sipef Biodiversity Indonesia, PT. Rimba Makmur Utama, PT. Rimba Raya Conservation, PT. PGE Tbk Area Kamojang, PT. Pertamina Geothermal Energy Area Ulubelu, PT. Ekosistem Khatulistiwa Lestari, PT. Pertamina Patra Niaga Fuel Terminal Parepare, PT. Bio Farma (Persero), PT. Kilang Pertamina Internasional Refinery Unit IV Cilacap, PT. Bintang Indokarya Gemilang, PT. Restorasi Ekosistem Indonesia, PT. Bambu Nusa Verde, PT. Restorasi Habitat Orangutan Indonesia, PT. Aneka Tambang Tbk UBPE Pongkor, PT. ANTAM Tbk UBPB Kalimantan Barat, PT. Solusi Bangun Indonesia Tbk, PT. Indonesia Asahan Aluminium, PT. PLN (Persero), PT. Semen Indonesia Tbk, PT. Pertamina Patra Niaga Integrated Terminal Makassar, PT. Bukit Asam Tbk, PT. Freeport Indonesia, PT. Kilang Pertamina Internasional RU II Dumai, PT. KPI Unit VI Balongan, PT. Panarub Industry, PT. Avian Avian Tbk, PT. Pertamina Patra Niaga Integrated Terminal Semarang, PT. Indah Kiat Pulp & Paper Mills.

Main Outcome Achieved

Headline Indicator 2.1 – Area Under Restoration; and
National Indicator 2a – Increasing the extent of ecosystem restoration, rehabilitation, and reclamation areas

Based on data from 2018, Indonesia had a total of 13.3 million ha of critical land. Through forest and land rehabilitation efforts implemented between 2018 and 2024, approximately 1,562,109 ha have been rehabilitated, representing 11.69% of the total critical land area. For peatland ecosystems, Indonesia has established the National Peat Hydrological Unit Map through [the Minister of Environment and Forestry Decree No. 129/2017](#), identifying a total peat hydrological area of 24,667,804 ha. Restoration efforts carried out from 2016 to 2024 have covered 5,987,215 ha, indicating that 24% of the national peatland ecosystem has been restored to date.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Despite significant progress in advancing ecosystem restoration efforts, several challenges remain, including:

- 1. Policy and regulatory aspects
Indonesia continues to face challenges in harmonizing policies and regulatory frameworks for ecosystem restoration, including overlapping regulations and differing methodologies across sectors, which contribute to data inconsistencies and potential overclaiming of rehabilitation sites. In addition, regulations governing the restoration of specific ecosystems, such as coral reefs, are still under development, and nationally standardized criteria and indicators for assessing restoration effectiveness have not yet been fully established. To address these challenges, Indonesia is advancing cross-sectoral regulatory harmonization, developing more unified national methodologies, and establishing standardized criteria and indicators to support consistent evaluation of restoration outcomes.
- 2. Institutional aspects
Institutional challenges remain related to limited coordination among institutions with overlapping mandates and potential differences in interests among stakeholders. In response, Indonesia is strengthening cross-sectoral coordination mechanisms and promoting collaborative and participatory approaches in the planning and implementation of ecosystem restoration.
- 3. Financial aspects
Limited budget availability, particularly for monitoring, data management, and the development of technology-based systems, remains a key challenge. At the same time, ecosystem restoration, especially in coastal and marine areas, requires substantial and sustained financial resources. To address this, Indonesia is promoting sustainable financing through government budgets as well as alternative and innovative funding sources, and integrating restoration financing into development planning frameworks.
- 4. Human resource capacity
Challenges in human resource capacity include limited numbers and capacity of personnel involved in monitoring and post-rehabilitation maintenance, as well as gaps in technical skills related to the use of technology. Indonesia is addressing these challenges through capacity-building initiatives, continuous technical training, and the involvement of local communities in monitoring activities.
- 5. Science and technology aspects
Monitoring and post-rehabilitation maintenance remain suboptimal due to limited monitoring systems and tools, as well as the underutilization of real-time environmental data and climate and hydrological projections. To address these gaps, Indonesia is promoting the development of technology-based monitoring systems, the integration of national data platforms, and the use of scientific modelling to support evidence-based and adaptive restoration planning.
- 6. Infrastructure and accessibility aspects
Many rehabilitation sites are located in remote and difficult-to-access areas and are supported by limited monitoring infrastructure, affecting the effectiveness of field-based monitoring. In response, Indonesia is improving accessibility, strengthening monitoring infrastructure, and utilizing remote and digital technologies to support more effective ecosystem restoration monitoring.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Ecosystem Restoration in Way Kambas National Park as Habitat for the Sumatran Rhino and Sumatran Elephant

Ecosystem restoration in Way Kambas National Park, Lampung Province, represents a landscape-scale best practice implemented through resort-based management and multi-stakeholder partnerships. Restoration activities are focused on rehabilitation zones and open areas through reforestation, vegetation enrichment, and wetland habitat management to support key species, particularly the Sumatran Rhino.

As of 2024, ecosystem restoration has been implemented across more than 1,300 ha through collaboration among park management, forest farmer groups from surrounding communities, non-governmental organizations, and academic institutions. The restoration approach prioritizes native and wildlife food plant species and is complemented by site protection measures, including fire prevention and human-wildlife conflict management.

The program has contributed to improved habitat quality and ecosystem functionality, while strengthening community engagement and supporting sustainable area management (Figure 2.1). The Way Kambas experience demonstrates that species-focused restoration, conservation partnerships, and adaptive management are effective in supporting ecosystem recovery and advancing biodiversity conservation.

Habitat-based Ecosystem Restoration in Gunung Leuser National Park

Ecosystem restoration in Gunung Leuser National Park (GLNP) represents a habitat-based best practice implemented in a phased manner through scientific approaches and conservation partnerships. Restoration activities are focused on degraded areas experiencing high pressure on wildlife habitats, particularly at the Bukit Mas, Barak Induk, and Cinta Raja III restoration sites, which form an integral part of the Leuser Ecosystem landscape.

Throughout 2023, ecosystem restoration efforts in GLNP achieved significant progress through the production and planting of native tropical rainforest species. At the Bukit Mas site, 22,000 seedlings representing 23 species were produced, accompanied by enrichment planting and maintenance across 20 ha. At Barak Induk, 33,000 seedlings were produced with planting and maintenance activities covering 30 ha, while at Cinta Raja III, 35,000 seedlings from 28 species were produced for enrichment planting over 30 ha. In addition, through conservation partnership schemes with conservation forest farmer groups (*Kelompok Tani Hutan Konservasi/KTHK*), restoration planting was carried out across up to 150 ha, further strengthening community involvement in ecosystem recovery. The restoration approach in GLNP emphasizes the use of native tree species consistent with the reference ecosystem as a key factor in successful habitat recovery (Figure 2.2).

The success of ecosystem restoration in GLNP is further supported by multi-stakeholder partnerships involving park management, NGOs, and surrounding communities. Conservation partnership schemes play a crucial role in ensuring the sustainability of restoration activities, enhancing community awareness, and reducing pressures on the protected area.

Community-Based Peatland Restoration in Jambi, Sumatra

One example of how non-state actors support the Government of Indonesia in implementing Biodiversity Target 2 on ecosystem restoration is the [Sumatra Peatland Restoration Program](#), implemented by Belantara Foundation in collaboration with the community forest farmers' group (*Gabungan Kelompok Tani Hutan Wono Lestari*). Initiated in June 2022, the program aims to restore 95 ha of degraded peatland within the Social Forestry area (*Hutan Kemasyarakatan*) of Jati Mulyo Village, Dendang Subdistrict, Tanjung Jabung Timur Regency, Jambi Province.

As of 2025, the program has rehabilitated approximately 45 ha through the planting and maintenance of around 32,392 multi-purpose tree seedlings. Activities have included community capacity strengthening, seedling production and land preparation, establishment of a community nursery and field facilities, planting and maintenance, and ongoing monitoring and evaluation. This approach combines ecological restoration with sustainable livelihood development to ensure long-term community engagement.

Five multi-purpose tree species (MPTS), areca nut (pinang), jengkol, jackfruit (nangka), agarwood (gaharu), and coffee, have been prioritized for their ecological and economic benefits. These species contribute to hydrological stabilization of peat soils, increased biomass, improved soil quality, and reduced fire risk, while also providing income and food sources for local communities.



Figure 2.1. Ecosystem Restoration in Way Kambas National Park



Figure 2.2. Ecosystem Restoration in Gunung Leuser National Park

Jati Mulyo Village was selected due to its status as a 93 ha Social Forestry area and its proximity to the Londrang Peat Protection Forest, part of a critical peat hydrological unit in Jambi Province. The area is vulnerable to peatland fires due to reduced surface water levels and peat decomposition. Restoration activities therefore contribute to improved water regulation, reduced fire hazards, and strengthened landscape-level ecological connectivity.

With a population of more than 630 people across 230 households, the initiative demonstrates how the social forestry scheme enables communities to actively participate in long-term peatland restoration while generating sustainable socio-economic benefits. By aligning ecological recovery with direct livelihood incentives through agroforestry, the program strengthens community stewardship and contributes meaningfully to Indonesia’s national restoration target.

Women-Led Bamboo Restoration in Flores

The Mama-Mama Bambu initiative in Flores, East Nusa Tenggara, represents a community-driven restoration model that directly supports IBSAP National Target 2: increasing ecosystem restoration, rehabilitation, and reclamation, in line with KMGBF Target 2 on restoring degraded ecosystems. In response to land degradation and increasing climate vulnerability, rural women, supported by Yayasan Bambu Lestari, have restored critical and idle lands through large-scale bamboo cultivation. Bamboo plays a key ecological role in dryland ecosystems, strengthening slope stability, enhancing groundwater recharge, and reducing risks of drought, floods, and landslides. To date, 2,519,633 living bamboo seedlings have been produced, mobilizing restoration efforts across 21 villages in seven districts, led by 388 women pioneers. This initiative demonstrates that restoration can be implemented at scale through locally adapted species and women’s leadership. By linking ecological recovery with livelihood improvement, the model provides a practical pathway for accelerating progress toward national restoration targets while contributing to Indonesia’s commitment under the KMGBF.

Indicator Data

Headline Indicator 2.1 Area Under Restoration; and

National Indicator 2.a Increasing the extent of ecosystem restoration, rehabilitation, and reclamation areas

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
2.1 Area Under Restoration	Ecosystem	Forest and Land Ecosystems	2024	ha	1,562,109.42	Cumulative, published on 2025
		Peatland Ecosystem	2024	ha	5,987,215.63	
		Coral Reef Ecosystem	2024	ha	78.06	

National Indicator 2.a is the same as Headline Indicator 2.1; therefore, the same data values are reported.

National Biodiversity Target 3

Protection and Effective Management of Protected Areas and High Biodiversity Value Areas in Terrestrial and Aquatic Ecosystems



KMGBF GOAL A

Protect and Restore

Sustainable Development Goals



KMGBF Target 3



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Main actions taken to implement the target

National Biodiversity Target 3 aims to ensure the protection and effective management of protected areas and high-biodiversity-value areas in terrestrial and aquatic ecosystems. This target is operationalized through the following six action groups under the IBSAP 2025–2045:

- 3.1 Designation of national protected areas in terrestrial ecosystems;
- 3.2 Designation of conservation areas in marine, coastal, and small island ecosystems;
- 3.3 Development of preservation areas within production landscapes to maintain ecosystem functions;
- 3.4 Allocation of community-management areas under traditional, customary, and local communities' governance systems that contribute to biodiversity conservation;
- 3.5 Establishment and management of wildlife corridors; and
- 3.6 Enhancement of management effectiveness of protected areas in both terrestrial and marine ecosystems, including Preservation Areas.



Summary of progress towards the target, including the main outcomes achieved

Indonesia has made substantial progress in implementing National Biodiversity Target 3, which aims to ensure the protection and effective management of protected areas and high-biodiversity-value landscapes and seascapes. With the enactment of [Law No. 32/2024](#), conservation is no longer limited to designated protected areas but also applies in areas with the potential to be designated as preservation areas. These include buffer zones of conservation areas, ecological corridors, High Conservation Value (HCV) areas, community-managed conservation areas, and areas protected under local customary systems.

In terrestrial ecosystems, Indonesia has implemented a range of strategic policy measures to strengthen the designation, management, and safeguarding of protected areas. These efforts include the expansion and reinforcement of the functions of Nature Reserves (*Kawasan Suaka Alam/KSA*), Nature Conservation Areas (*Kawasan Pelestarian Alam/KPA*), and Game Reserves (*Taman Buru/TB*). Management of key ecosystems, particularly mangrove and peat ecosystems, has also been enhanced through the establishment of Peat Hydrological Units (*Kesatuan Hidrologis Gambut/KHG*), which help maintain essential ecological processes that support biodiversity and ecosystem services.

In marine and coastal areas, the Government has advanced the implementation of the Indonesia Marine Conservation Strategic Plan 2020-2024, which provides the policy foundation for expanding Marine Protected Areas (MPAs) to achieve the national objective of protecting 30% of marine area by 2045. The continued growth of protected mangrove areas and coastal ecosystems further reinforces Indonesia's commitment to Global Target 3 and strengthens national resilience to climate change.

To support science-based policy implementation, the Government has issued the [Guidelines for the Participatory Inventory and Verification of High-Biodiversity-Value Areas in Conservation Zones \(2020–2024\)](#). These guidelines provide a framework for biodiversity inventories within conservation areas as part of sustainable forest management. The target area for inventory between 2020 and 2024 is 27 million ha, comprising 22 million ha of terrestrial conservation areas and 5 million ha of marine conservation areas.

Habitat suitability analyses, undertaken in collaboration with universities, research institutions, and non-state actors, have further strengthened adaptive management. These analyses utilize field monitoring data, including information collected through the Spatial Monitoring and Reporting Tool (SMART) Patrol

system across conservation areas. Indonesia has also developed technical guidelines for the verification of high-biodiversity-value areas outside designated conservation zones, improving the identification of ecologically important areas across different land-use and administrative contexts.

Ecosystem protection efforts are also advanced through collaborative management approaches under the framework of Other Effective Area-based Conservation Measures (OECMs). In Indonesia, the inventory and verification of high-biodiversity-value areas within preservation areas function as a foundation to broaden the involvement of multiple stakeholders in ecosystem protection. Regarding the OECM terminology, [Law No. 32/2024](#) recognizes preservation areas, defined as areas outside wildlife reserves, nature conservation areas, and marine, coastal, and small island conservation zones that maintain their ecological integrity to support life-sustaining functions and the survival of biological resources and their ecosystems.

At present, the government is conducting an inventory of the extent of these Preservation Areas. For the marine regions, two categories have been identified: candidate preservation areas, which are intended to be formally designated in the short term (2025-2030) covering 3,884,251.86 ha, and potential preservation areas, which represent areas with preservation potential to be designated in the medium to long term (2031-2045) covering 5,878,594.79 ha. The area and spatial distribution of preservation areas in terrestrial regions remain under inventory at this stage.

For terrestrial conservation areas, management effectiveness is assessed through the regular application of evaluation frameworks. Terrestrial protected area management is evaluated using the Management Effectiveness Tracking Tool (METT), which assesses key components such as governance, planning, implementation, and conservation outcomes. This tool provides a standardized mechanism to monitor performance and guide adaptive management improvements across national parks and other terrestrial conservation areas.

In the marine and coastal sector, the designation of conservation areas represents a critical first step toward ensuring sustainable management. However, to assess their ecological and social impact, management effectiveness evaluations must be regularly conducted. The Evaluation of the Effectiveness of Conservation Area Management (*Evaluasi Efektivitas Pengelolaan Kawasan Konservasi/EVIKA*) framework is used for this purpose, comprising 24 indicators covering aspects of governance, resources, conservation targets, and socio-economic and cultural dimensions. Evaluation results are classified into minimum, optimum, and sustainable levels. This instrument ensures that designated areas are managed effectively, adaptively, and sustainably, while integrating ecological, social, and good governance principles.

Non-state actors contribute to National Biodiversity Target 3 by supporting the protection and effective management of protected areas and other high biodiversity value areas in terrestrial and aquatic ecosystems. Their contributions include activities such as assisting in the establishment and strengthening of conservation areas, supporting spatial planning processes, promoting the recognition of community-managed and -conserved areas, enhancing management effectiveness, and supporting restoration and connectivity efforts. Through partnerships and technical support, NSAs complement government actions to strengthen conservation governance and improve overall management outcomes.

Stakeholders contributing to the implementation of this target include the Ministry of Environment (KLH/BPLH), Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (KemenATR/BPN), the Ministry of Agriculture (Kementan), the Ministry of Energy and Mineral Resources (Kemen ESDM), the Ministry of Public Works (KemenPU), the Ministry of Transportation (Kemenhub), and Local Governments (Provincial and City/Regency), as well as support from non-state actors such as Wildlife Conservation Society - Indonesia Program, Konservasi Indonesia, Working Group ICCAs Indonesia, Perkumpulan Sawit Watch, Yayasan Kehati, Customary Land Registration Agency (BRWA), UNDP Indonesia, Burung Indonesia, Fauna & Flora International Indonesia Program, PT. Kilang Pertamina Internasional Refinery Unit IV Cilacap, PT. Bintang Indokarya Gemilang.

Main Outcomes Achieved

Headline Indicator 3.1 – Coverage of protected areas and other effective area-based conservation measures

Indonesia has made steady progress in expanding the area under protection and conservation management. As of 2024, the combined extent of terrestrial and marine conservation areas reached 52,300,594 ha (Figure 3.1).

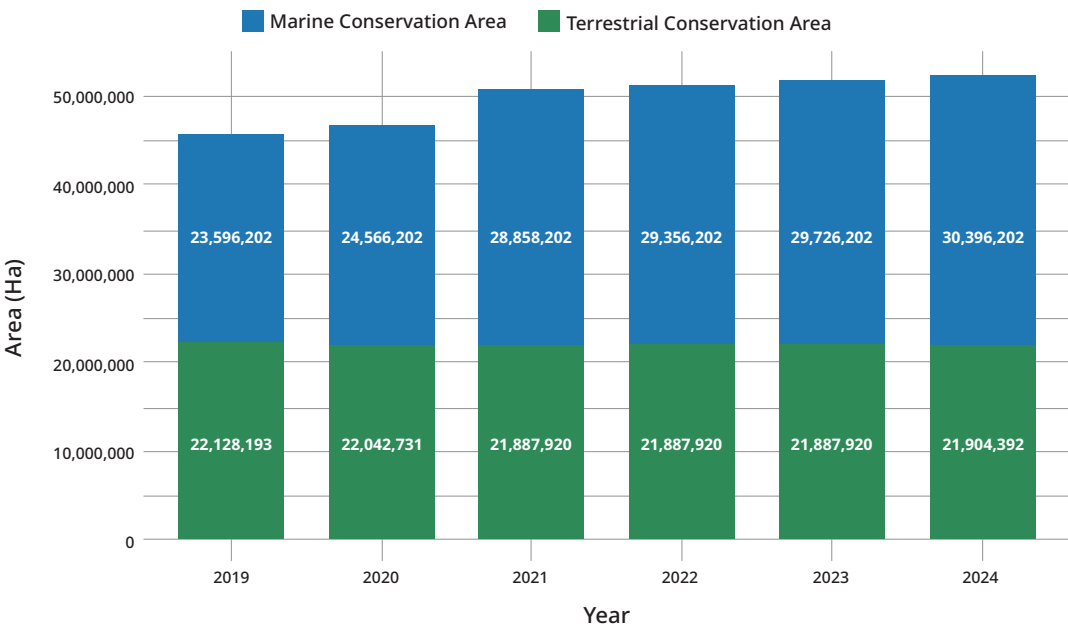


Figure 3.1. Total Conservation Area in Terrestrial and Marine Regions, 2019–2024

National Indicator 3.a – Extent of Protected Areas, including Terrestrial Preservation Areas, that are Protected and Managed

Terrestrial conservation has expanded through both the strengthening of formally designated protected areas and the identification of high-biodiversity-value areas outside conservation forests. By the end of 2024, more than 573 terrestrial conservation areas were operating in accordance with their legal designation, covering a total area of 21,904,391.62 ha ([Forestry Statistics, 2024](#)). These include nature reserves (*Kawasan Suaka Alam/KSA*), nature conservation areas (*Kawasan Pelestarian Alam/KPA*), and game reserves (*Taman Buru/TB*). In parallel, a national inventory of high-biodiversity-value areas outside designated conservation zones has been undertaken since 2020. By 2024, the total inventoried area reached 9,953,269.34 ha across 26 regions ([Forestry Statistics, 2024](#)).

Biodiversity Park (*Taman Keanekaragaman Hayati*) is a designated area outside state forest zones that functions as both in-situ and ex-situ conservation sites for local biological resources. Established under [Minister of Environment Regulation Number 3/2012](#) on Biodiversity Parks, and initiated by local governments, these parks aim to safeguard native biodiversity while strengthening ecological resilience. The parks serve as living collections of local plant species, sources of genetic resources and seedlings, habitats for pollinators and seed-dispersing fauna, and spaces for research, education, ecotourism, and urban green open space expansion. Biodiversity parks play an important role in preventing the decline and extinction of threatened native plant species while increasing vegetation cover in urban and peri-urban areas. In total, 106 Biodiversity Parks (4,728 ha) are distributed across Indonesia as of 2025 (Figure 3.2).



Figure 3.2. Distribution of Biodiversity Parks in Indonesia (Ministry of Environment, 2025)

National Indicator 3.b – Percentage of marine protected and preservation areas relative to total marine area

The total area of MPAs increased from 10 million ha in 2010 to 20.87 million ha in 2018, and 24.5 million ha in 2020, reaching 30.39 million ha in 2024. This corresponds to approximately 9.5% of Indonesia's total marine area, distributed across 452 marine conservation sites (Ministry of Marine Affairs and Fisheries Performance Report 2020–2024). Zoning systems within MPAs regulate fully protected zones, sustainable-use zones, and permitted human activities, supporting balanced management while maintaining ecological functions.

National Indicator 3.c – Number of protected and preservation area units managed effectively

Management effectiveness is assessed through the regular application of evaluation frameworks for terrestrial and marine protected areas. In 2024, terrestrial management was assessed using the Management Effectiveness Tracking Tool (METT), covering 55 National Parks, 214 Nature Reserves, 79 Wildlife Reserves, and 39 Grand Forest Park ([The State of Indonesian Forest, 2024](#)). Of all assessed areas, those categorized as effective (METT score > 67) increased in number from 253 sites in 2019 to 275 sites in 2024.

In the marine sector, management effectiveness is also assessed through the Evaluation of the Effectiveness of Conservation Area Management (EVIKA). EVIKA assessments were conducted in 61 marine conservation areas in 2022, increasing to 117 areas in 2024, supporting adaptive management and continuous improvement of conservation outcomes ([Directorate of Ecosystem Conservation, Ministry of Marine Affairs and Fisheries, 2024](#))

Summary of key challenges encountered and different approaches that may be taken for further implementation

The main challenges identified in achieving National Biodiversity Target 3 are as follows:

- Limited Data Coordination and Integration**
Coordination and integration of spatial and numerical data remain limited both across administrative levels within ministries and among the institutions responsible for protected-area management. Each institution maintains its own systems, databases, and data-collection procedures, resulting in fragmented datasets and difficulties in developing a comprehensive national picture of protected areas and Other Effective Area-Based Conservation Measures (OECMs), which in Indonesia are implemented primarily through preservation areas. Dynamic changes in institutional structures within and between ministries have further complicated coordination and slowed progress toward data standardization. These issues collectively hinder effective monitoring, evaluation, and management of conservation areas at the national scale.
- Capacity Development and Technology Transfer**
As the number of designated protected areas continues to grow, an ongoing challenge is ensuring that all sites are managed effectively. This requires sufficient and sustained funding, consistent monitoring, capacity building for field personnel, and reliable data to support evidence-based decision-making. Strengthening human-resource capacity at both national and local levels remains crucial for improving management effectiveness. Enforcement of regulations to protect these areas from external threats, such as illegal logging, land conversion, and unsustainable resource use, requires consistent attention, technical support, and coordination across agencies.
- Economic Development Pressures**
Indonesia continues to balance conservation objectives with national development priorities and community welfare. Economic pressures from mining, industrial development, and agriculture continue to pose risks to the long-term sustainability of protected and conservation areas. Communities that depend on natural resources may be affected by conservation policies that restrict access. As such, active engagement with government agencies, the private sector, and local communities is essential to align conservation goals with sustainable livelihood needs. Achieving this balance requires integrated planning and inclusive policy approaches, particularly in areas where economic development remains a priority. Ensuring that conservation efforts generate direct benefits for communities through sustainable tourism, green enterprises, or payment for ecosystem services is critical for long-term conservation success and community support.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Several examples illustrate Indonesia's success in implementing policies that integrate data systems, strengthen management effectiveness, and expand the conservation landscape.

The One Map Policy

The implementation of the One Map Policy, coordinated by the Geospatial Information Agency (BIG), has enabled the integration of spatial data from various ministries and government institutions into a unified national geospatial information system. This system provides a more comprehensive and accurate picture of the distribution and extent of protected areas and Other Effective Area-Based Conservation Measures (OECMs) across Indonesia.

The One Map Policy serves as a critical foundation for national monitoring and evaluation of protected and conservation areas and supports data-driven decision-making in environmental and spatial planning. It also enhances transparency and institutional collaboration, fostering more effective coordination among agencies involved in conservation management.

Conservation Mapping within Concession Areas: High Conservation Value/ High Carbon Stock Management by Private Companies

Another example of successful conservation policy implementation is the management of High Conservation Value (HCV) and High Carbon Stock (HCS) areas within concession lands operated by companies in the plantation and forestry sectors. Companies are required to identify and manage HCV and HCS areas within their production landscapes. This policy represents a critical step toward biodiversity conservation and climate mitigation, as HCV and HCS areas play vital roles in maintaining species diversity, protecting ecological processes, sequestering carbon, and reducing deforestation.

Through this mechanism, plantation and forestry companies contribute to expanding conservation coverage beyond formally designated conservation areas, promoting sustainable corporate environmental responsibility. The HCV/HCS approach has now been adopted by many major companies operating in Indonesia and is widely recognized as an integral component of corporate sustainability practices that support Indonesia’s broader conservation and climate objectives.

Kenyah Customary Community

The Kenyah Customary Community residing in North Kalimantan, possess a distinct and varied biocultural diversity. A prominent example of this is tana’ ulen, a forest management practice grounded in customary value systems and regulations, wherein specific forest zones are allocated by the Kenyah People as restricted or forbidden areas. The practice of tana’ ulen emerges from the profound relationship between the community, the land, and the ecosystem of their areas. This relationship engenders a body of traditional knowledge that guides customary community in treating nature with reverence, utilizing it as a source of livelihood, sustenance, and healthcare, while serving as a foundation for cultural identity and intergenerational sustainability. For instance, the Dayak Kenyah Apau Ping Adat People in Bahau Hulu District, Malinau Regency, North Kalimantan, manage 53,902.38 ha of tana’ ulen. In the contemporary context, the practice of tana’ ulen can be conceptualized as a form of management equivalent to conservation.

Through mechanisms of customary law (*hukum adat*), the community collectively regulates access to, utilization of, and protection for tana’ ulen areas. This management yields tangible impacts to this day, wherein these areas retain high biodiversity value and significant utility for the community. Tana’ ulen functions as a life-support system for the current generation while simultaneously serving as a natural resource reserve for future generations. Consequently, it guarantees the sustainability of both ecological and social functions.

The practice of tana’ ulen demonstrates that customary-managed areas for biodiversity conservation have long existed and functioned effectively in Indonesia. This practice reflects biodiversity conservation rooted in lived experience and local ecological knowledge, serving as concrete evidence of the contributions of Customary and Local Communities to the protection and management of areas of high biodiversity value.

Indicator Data

Headline Indicator 3.1 Coverage of protected areas and other effective area-based conservation measures

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
3.1 Coverage of protected areas and other effective area-based conservation measures	Conservation area	Terrestrial conservation area	2024	ha	21,904,392	
			2023	ha	21,887,920	
			2022	ha	21,887,920	
			2021	ha	21,887,920	
			2020	ha	22,042,731	
			2019	ha	22,128,193	
	Conservation area	Marine conservation area	2024	ha	30,396,202	
			2023	ha	29,726,202	
			2022	ha	29,356,202	
			2021	ha	28,856,202	
			2020	ha	24,566,202	
			2019	ha	23,596,202	

National Indicator 3.a Extent of protected areas, including terrestrial Preservation Areas, that are protected and managed

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
3.a Extent of protected areas, including terrestrial Preservation Areas, that are protected and managed	Conservation area	Terrestrial conservation area	2024	ha	21,904,392	
			2023	ha	21,887,920	
			2022	ha	21,887,920	
			2021	ha	21,887,920	
			2020	ha	22,042,731	
			2019	ha	22,128,193	
	Preservation area	Biodiversity Park	2025	ha	4,728	

National Indicator 3.b Percentage of marine protected and preservation areas relative to total marine area

Use national data set

Indicator	Year	Unit	Value	Footnote
3.b Percentage of marine protected and preservation areas relative to total marine area	2026	Percent	9.5	

National Indicator 3.c Number of terrestrial and marine protected area units, including Preservation Areas, that are effectively managed

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
3.c Number of terrestrial and marine protected area units, including Preservation Areas, that are effectively managed	Terrestrial Area Management	National Park	2024	Number	55	
		Nature Reserve	2024	Number	214	
		Wildlife Reserve	2024	Number	79	
		Grand Forest Park	2024	Number	39	
	Marine Area Management	Marine Conservation Area	2024	Number	61	

National Biodiversity Target 4

Protection and Preservation of Species and Genetic Diversity



KMGBF GOAL A

Protect and Restore



KMGBF Target 4

Sustainable Development Goals



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Main actions taken to implement the target

Implementation of National Biodiversity Target 4 aims to halt species extinction, protect genetic diversity, and manage human-wildlife conflicts. Under the IBSAP 2025–2045, these efforts are organized into eight action groups, as follows:

- 4.1 Inventory and monitoring of populations and habitat suitability of the targeted species;
- 4.2 Protection of the genetic diversity of targeted species;
- 4.3 Conservation and restoration of genetic diversity in domesticated species;
- 4.4 Ex situ conservation of species;
- 4.5 Management of human-wildlife and aquatic biota conflicts;
- 4.6 Risk extinction assessment and monitoring of selected taxa for national and ecoregional priorities;
- 4.7 Enhancing the management of protected, conserved, and/or utilized aquatic biodiversity; and
- 4.8 Maintenance and development of germplasm and livestock breeding units to preserve genetic resources.

Summary of progress towards the target, including the main outcomes achieved

National Biodiversity Target 4 aims to protect and conserve species and genetic diversity in terrestrial and marine ecosystems, in alignment with KMGBF Target 4, which calls for urgent management actions to halt species extinction, protect genetic diversity, and manage human-wildlife conflicts. Indonesia has established a comprehensive legal and institutional framework to reduce extinction risks. Under [Minister of Environment and Forestry Regulation No. 106/2018](#), a total of 904 species, comprising plants, birds, mammals, reptiles, amphibians, fish, insects, and other invertebrates, are legally protected. As of 2023, the government has designated 28 aquatic biota species as fully protected and 13 as under limited protection.

To maintain viable populations in situ, the government collaborates closely with scientific institutions and non-state actors in monitoring habitats and population trends of priority taxa, including 25 wildlife species identified for targeted population recovery. Between 2019 and 2024, sustained reintroduction and release programs resulted in the return of significant numbers of individuals to their natural habitats (**Figure 4.1**). Individuals released for reintroduction or reinforcement are primarily sourced from captive breeding programs, serving as a vital link between ex situ and in situ conservation, or are recovered wildlife that have undergone extensive rehabilitation. Aquatic species subject to restocking and release initiatives include the Asian arowana (*Scleropages formosus* and *S. jardinii*), corals, seahorses, Banggai cardinalfish, and freshwater eels. Meanwhile, terrestrial species covered by these initiatives include various psittacines (parrots), sturnids (starlings), and raptors (birds of prey). Key flagship species include the Rote Island snake-necked Turtle (*Chelodina mccordi*), orangutans (*Pongo spp.*), gibbons (*Hylobates spp.*), and other primates. Additionally, the program encompasses large and medium-sized carnivores such as the Sumatran tiger (*Panthera tigris sumatrae*), sun bear (*Helarctos malayanus*), and the Asiatic golden cat (*Catopuma temminckii*), among many others.

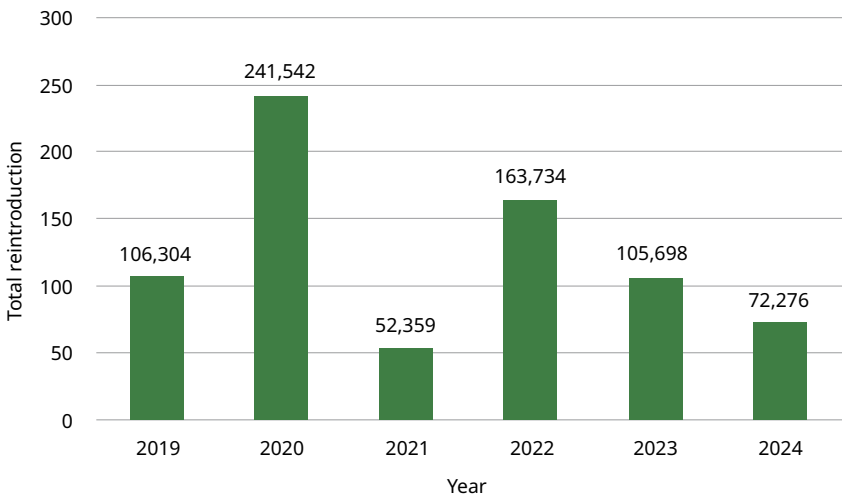


Figure 4.1. Wildlife reintroduction and release (2019 – 2024)

Comprehensive inventory and monitoring programs have been strengthened to assess population status and habitat suitability. These initiatives include long-term monitoring of flagship species across several strategic sites, particularly through dedicated Research Stations situated within various National Parks. These efforts are further complemented by the regular, continuous monitoring of both flagship and priority species, conducted directly by National Park management authorities to ensure sustained conservation oversight. Non-State Actors (NSAs) play a critical role in monitoring species populations across ecological corridors, diverse landscapes, and island ecosystems. Monitoring has also been initiated in marine areas in eastern Indonesian waters. Population monitoring of charismatic marine species, such as the whale shark (*Rhincodon typus*), scalloped hammerhead (*Sphyrna lewini*), reef manta ray (*Mobula alfredi*), oceanic manta ray (*Mobula birostris*), zebra shark (*Stegostoma tigrinum*), Halmahera epaulette shark (*Hemiscyllium halmahera*), Sahul dolphin (*Sousa sahalensis*), and dugong (*Dugong dugon*), has been conducted in locations including Raja Ampat, Kaimana, Saleh Bay, the Banda Sea, Papua, and Botubarani.

Meanwhile, terrestrial monitoring initiatives encompass umbrella and priority species; for instance, the white-crested myna subspecies in Bali, population and habitat assessments of the Sumatran orangutan and siamang in the Batang Toru ecosystem, camera-trap surveys for the Sumatran tiger and Javan leopard, and regular monitoring of Javan hawk-eagle, Flores hawk-eagle, Sumatran elephant, anoa, babirusa, maleo, Mahakam dolphin, leatherback turtle, banteng, Javan and Sumatran rhino, and proboscis monkey populations. The annual Asian Waterbird Census (AWC) Indonesia, implemented through a citizen science approach, has consistently recorded waterbird diversity (105 species in 2018; 123 in 2019; 105 in 2020; 99 in 2021; and 112 in 2022). Monitoring data were translated into spatial outputs, including species distribution maps and habitat extent analyses for orangutan, maleo, anoa, babirusa, Sumatran tiger, Sumatran elephant, and helmeted hornbill, as well as the delineation of Important Shark and Ray Areas (ISRA).

Efforts to safeguard genetic diversity have been reinforced through both in situ and ex situ measures. A total of 120 local livestock breeds are under genetic management, and between 2020 and 2025, 802 plant varieties have been protected, including 213 food crop varieties, 519 horticultural varieties, and 70 plantation crop varieties. From 2010 to 2025, 74 varieties were formally designated and 46 released. Plant genetic resources conserved in the national agricultural gene bank currently comprise 12,303 accessions, including cereals (5,077), legumes (3,137), tubers (2,431), microbial genetic resources (1,416), and other materials (242). Ex situ conservation was strengthened through increased births of priority species at zoological institutions and the expansion of biodiversity parks, which, cumulatively, covered 4,728.05 ha by 2024.

Genetic resource maintenance is further supported by 10 technical units (including national artificial insemination centers and embryo centers) and 14 commodity-based breeding and testing stations under the Indonesian Agency for Agricultural Assemblies and Modernization, managing germplasm and breeding programs for seven livestock species and 14 plant genetic resource collections.

Management of human–wildlife conflict has been intensified in cooperation with local conservation agencies (*Balai Konservasi Sumber Daya Alam/BKSDA*), particularly regarding incidents involving tigers, elephants, orangutans, and bears. Reported wildlife conflict cases increased from 130 in 2018 to 841 in 2024, reflecting both rising pressures and improved reporting systems. Wildlife rescue operations reached 2,490 individuals in 2023 and 2,432 in 2024, accompanied by strengthened mitigation measures. Finally, extinction risk assessments and species recovery planning have been advanced through Species Conservation Strategies and Action Plans (*Strategi Rencana Aksi Konservasi/SRAK*) and National Action Plans (*Rencana Aksi Nasional/RAN*), covering priority terrestrial taxa, including Javan gibbon, Javan leopard, titan arum, rafflesia, helmeted hornbill, yaki monkey, proboscis monkey, babirusa, anoa, Javan hawk-eagle, Malayan tapir, orangutan, maleo, Flores hawk-eagle, Sumatran tiger, Sumatran elephant, Javan rhino, Sumatran rhino, banteng, Komodo dragon, and Sunda pangolin, as well as priority marine taxa such as sea turtles, whale shark, sharks and rays, dugong and seagrass habitats, manta rays, eels, cetaceans, Chinese herring (terubuk), belida fish, arowana, corals, sea cucumbers, trochus, Banggai cardinalfish, marine mammals, sea fans, seahorses, giant clams, and Napoleon wrasse. Collectively, these measures demonstrate substantive progress toward halting species extinction, maintaining genetic diversity, and strengthening integrated species management across Indonesia’s terrestrial and marine landscapes.

Non-State Actors (NSAs) contribute to the achievement of National Target 4 through broad efforts to protect and preserve species and genetic diversity across terrestrial, freshwater, and marine ecosystems. Their contributions include activities such as species population and habitat monitoring, ecological research, camera-trap and technology-based surveys, development of technical guidelines and standard operating procedures, support for species recovery and reintroduction programs, and strengthening mitigation measures for human–wildlife conflict. NSAs also support patrols and surveillance in key habitats, promote citizen science initiatives, and contribute to the preparation and implementation of species action plans and best management practices. In addition, private sector initiatives complement these efforts through biodiversity monitoring around operational areas, habitat restoration, ex-situ conservation, tree propagation, mangrove rehabilitation, development of biodiversity parks, and conservation breeding programs.

Stakeholders support this target are the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Environment (KLH/BPLH), the National Research and Innovation Agency (BRIN), the Geospatial Information Agency (BIG), the Ministry of Transportation (Kemenhub), and Local Governments (Provincial and City/Regency), and non-state actors such as IUCN Indonesia Species Specialist Group, Belantara Foundation, Burung Indonesia, Forum Konservasi Gajah Indonesia, Forum Konservasi Orangutan Indonesia, Jejak Anoa, KupuKita, Konservasi Indonesia, Perhimpunan Ahli dan Pemerhati Primata Indonesia (PERHAPPI), Raptor Indonesia, Yayasan Borneo Nature Indonesia, Yayasan Kehati, Yayasan Madani Berkelanjutan, Yayasan Sahabat Bekantan Indonesia, Yayasan SINTAS Indonesia, YIARI, Wildlife Conservation Society-Indonesia Program, United Nations Development Program - Indonesia, and private sectors, such as PT. Kilang Pertamina Internasional Refinery Unit IV Cilacap, PT. Kilang Pertamina Internasional RU II Dumai, PT. KPI Unit VI Balongan, PT. Pembangunan Jaya Ancol Tbk, PT. Kilang Pertamina Internasional RU II Production Sungai Pakning, PT. HwaSeung Indonesia, PT. PGE Tbk Area Kamojang, PT. Kilang Pertamina Internasional RU III, and PT. Bio Farma (Persero).

Main Outcomes Achieved

Headline Indicator A.3 – Red List Index

The National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional/RPJMN*) establishes a baseline Red List Index (RLI) of 0.75 in 2024 (categorized as relatively secure), with a target of 0.76 by 2026. At present, however, the Red List Index has not yet been fully applied to National Biodiversity Target 4, as Indonesia is still in the process of developing its National Red List Index. The current Global Red List Index is derived from assessments of mammals, birds, cycads, amphibians, and corals. As an archipelagic country, Indonesia possesses highly diverse and distinct habitats and species compositions, making the development of a National Red List Assessment and a National Red List Index both a national priority and a commitment reflected in the long-term development plan.

Headline indicator A.4 – The proportion of populations within species with an effective population size > 500

Indonesia cannot yet report on this indicator. Current efforts include programs to increase populations of priority species, evaluations of the effectiveness of endangered species management, and ex situ conservation initiatives, such as the establishment of germplasm collections. To complement Headline Indicator A.4, Indonesia applies a policy-based approach through the development of Species Conservation Action Plans (*Strategi Rencana Aksi Konservasi/SRAK*) for terrestrial species and National Action Plan (*Rencana Aksi Nasional/RAN*) for aquatic species, organized by the Ministry of Forestry and the Ministry of Marine Affairs and Fisheries, respectively. For SRAK, selected species were chosen based on categorization as either protected, endemic, or threatened in both flora and fauna. To date, 24 SRAK documents have been issued for terrestrial flora and fauna, including flagship species such as the Javan Gibbon, Orangutan, Malayan Tapir, Maleo, and Flores Hawk-Eagle. These plans serve as a prioritization tool for threatened species, ensuring that conservation actions focus on taxa facing the highest risk and requiring urgent management intervention. For priority aquatic species, 12 National Action Plans have also been developed, covering species and ecosystems such as whale sharks, sharks and rays, and dugong–seagrass habitats.

In the agricultural sector, efforts to strengthen the conservation of genetic diversity, particularly for domesticated species, are being implemented through the development of germplasm management systems, livestock breeding units, and genetic conservation facilities. As of 2025, a total of 120 livestock breeds have been conserved and registered in FAO’s Domestic Animal Diversity Information System (DAD-IS), supported by 20 artificial insemination centers and one livestock embryo center serving as national genetic conservation facilities. In addition, 120 livestock breeds were officially protected between 2010 and 2025. For plant genetic resources, 802 plant varieties were protected between 2020 and 2025, comprising 213 food crop varieties, 519 horticultural varieties, and 70 plantation crop varieties. These efforts contribute to strengthening food security, enhancing climate resilience, and promoting sustainable agricultural production systems, while ensuring the maintenance of effective population sizes and the long-term conservation of genetic diversity.

National indicator 4.a – National Red List Assessment Index

This indicator is considered a long-term national indicator. The foundational step is to conduct National Red List Assessments, which will subsequently enable the calculation of the index. At present, the headline indicator of Red List Index is reported using global IUCN assessments, with index values for mammals, birds, cycads, amphibians, and corals ranging from 0.78 to 0.75 between 2018 and 2024. When calculated using all species assessed in Indonesia up to 2024, the Red List Index is 0.90, while calculations based solely on endemic species yield a value of 0.83.

As of 2025, Indonesia has completed National Red List Assessments for 11 macaca species, 1 banteng species, 3 endemic Sulawesi wild pig species, 542 Indonesian endemic aves species, and 120 Indonesian endemic orchid species. Indonesia also plans to assess the status of 483 amphibian species and 142 mollusc species in the next phase, subject to the available funding and expertise.

Indonesia has adopted a strategic prioritization approach to species assessments, focusing on taxonomic groups with the highest conservation concern, ecological importance, or national management priority. This approach responds to the country's vast geographic scale, archipelagic configuration, and exceptionally high levels of plant and animal diversity and endemism, which require substantial data, technical capacity, and specialized expertise and make it impractical to assess all species simultaneously.

To advance this work, the Government of Indonesia collaborates closely with experts within the Indonesia Species Specialist Group (IdSSG), and the assessment results will be published in scientific publications. The establishment and active engagement of IdSSG reflect Indonesia's strong national commitment to strengthening the scientific foundation for species conservation and to progressively building a comprehensive National Red List Index.

 Summary of key challenges encountered and different approaches that may be taken for further implementation

- 4
- 1. Policy and Regulation**

Indonesia, as a megabiodiversity country, faces significant challenges in assessing species extinction risks due to the large number of species and high levels of endemism. Existing regulations provide a strong foundation for species protection; however, gaps remain in translating these policies into effective operational frameworks. The increasing transboundary utilization and trade of wildlife has become one of the key triggers of extraction pressures on wildlife resources in Indonesia, as a country with unique species diversity, such as parrots and pangolins. In this context, the concepts of sustainable use, non-extractive use, and bioprospecting need to be positioned as central pillars of species management in order to reduce the level of biodiversity threat in natural ecosystems.
 - 2. Institutional (Including Coordination)**

Dynamic changes in organizational structures within and across ministries have hindered the optimization of institutional management. Although task forces and networks, such as the Indonesia Species Specialist Group (IdSSG), have been established, the integration of efforts across key sectors, including agriculture, forestry, and the environment, still requires stronger cross-sectoral coordination to ensure coherent national planning and effective implementation of species conservation actions.
 - 3. Financial**

The sustainability of conservation and monitoring programs is constrained by limited and fragmented funding. Budget allocations for long-term species monitoring, ex situ conservation, and biodiversity data management systems remain largely project-based, making continuity and scaling-up efforts challenging. Dedicated and predictable financial mechanisms are therefore needed to ensure the long-term sustainability of biodiversity conservation programs.
 - 4. Human Resource Capacity**

There is a shortage of qualified personnel capable of conducting field verification and species monitoring, both in terms of numbers and technical expertise. Capacity gaps in taxonomy, population modeling, and genetic resources, as well as a limited number of taxonomists, continue to constrain Indonesia's ability to produce robust and scientifically credible species assessments.
 - 5. Science and Technology**

The development and application of modern scientific tools, including molecular and genomic approaches, remain limited. The absence of standardized methodologies and analytical frameworks for national species threat assessments further constrains comparability and scientific rigor. In addition, a national Red List Index has yet to be established, despite its critical importance for tracking progress toward KMGBF Target 4.

- 6. Infrastructure**

The lack of dedicated infrastructure for biodiversity monitoring, including laboratories, data centers, and ex situ facilities, continues to constrain effective conservation action. Establishing well-equipped institutions for ex situ conservation and genetic resource preservation is essential to support both in situ management efforts and national-level species assessments.
- 7. Data**

Limited availability of primary and high-quality data remains a key obstacle. Many areas in Indonesia are under-surveyed, and significant data gaps persist in population trends, species distribution, and genetic diversity, due to the large number of species and the country's vast geographic area. Existing information systems for biodiversity and SDG monitoring are not yet fully integrated, resulting in fragmented data flows and challenges in aligning national reporting with global indicators.

 Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Sustainable Customary Forest Livelihoods through Benzoin (Kemenyan) Management in North Tapanuli, Indonesia

In Simardangiang Village, North Tapanuli (North Sumatra), customary Batak communities have demonstrated a resilient and sustainable forest-based livelihood system centered on the management of benzoin resin (*Styrax sumatrana*), locally known as kemenyan or haminjon. The 2,917-ha customary forest, officially recognized by the Ministry of Forestry, provides legal certainty for community-based forest governance and reinforces the protection of both biodiversity and customary rights

For more than a thousand years, the Batak community has practiced marhaminjon, a traditional system of sustainable resin tapping that maintains forest canopy integrity and ecological balance. Benzoin trees grow naturally in montane forests at elevations of 1,000–1,400 m and depend on intact forest ecosystems for resin production. Tapping is conducted only on mature trees (around 10 years old), with annual rotational cycles and strict customary rules to prevent overexploitation. This approach ensures long-term regeneration and forest conservation while supporting household income.

Women play a central and strategic role in the benzoin value chain. Women are actively involved in resin drying, storage, harvest recording, group savings management, and replanting of young trees. Beyond technical roles, women contribute to knowledge transmission, economic decision-making, and strengthening social cohesion. Benzoin income functions as long-term household savings, particularly for children's education, while daily subsistence is supported by rice farming largely managed by women.

Economically, the benzoin sector remains highly significant. North Tapanuli contributes approximately 70% of North Sumatra's benzoin production. In 2021, production reached 8,845 tons across 23,172 ha, generating an estimated economic circulation of IDR 2.65 trillion annually at the farm-gate level. Stable resin prices provide strong incentives for communities to maintain forest cover rather than convert land to monoculture plantations. Communities have observed that areas converted to eucalyptus plantations experience reduced water availability, reinforcing local commitment to conserving benzoin forests as primary forest systems.

Institutionally, customary law is reinforced through the Parpatihan customary institution, which regulates forest administration, resolves boundary disputes, and manages access rights. The synergy between customary governance and state recognition has strengthened conservation outcomes, enhanced tenure security, and reduced external exploitation pressures. Village authorities further support regeneration efforts, youth training, and participatory forest data recording.

From Aquaria to the Wild: Lessons Learned from StAR Indonesia’s Shark Rewilding Model

Launched in early 2020, the *Stegostoma tigrinum* Augmentation and Recovery (StAR) project has progressed from ideation to permitting to implementation and expansion from Indonesia to Thailand in a short 5 years. The first project under the ReShark Initiative, StAR Indonesia, aims to re-establish a genetically diverse breeding population of endangered Indo-Pacific leopard sharks in the protected waters of Raja Ampat by rewilding pups hatched from eggs that are imported from approved breeder facilities around the world (Figure 4.2). Importantly, this bold initiative is driven by a unique coalition of over 100 partners in 20 countries, benefitting from the diverse skills and knowledge base of large public aquariums, national and local government fisheries and coastal management agencies, shark scientists and conservationists. To date, the StAR project Indonesia has successfully imported over 150 genetically appropriate *Stegostoma* eggs into Indonesia and has released 51 pups into the wild, with post-release monitoring (using acoustic and satellite telemetry and citizen science photo ID monitoring) confirming the rewilded pups are able to forage naturally and survive for at least 10 months beyond release. The project has now trained 41 young Indonesian shark aquarists and has a local outreach program that involves schoolchildren from Raja Ampat in sourcing prey items for the pups and visits to the two nurseries to learn about shark conservation. Guided by the IUCN “One Plan” approach, the StAR project has developed a methodology for combining ex situ and in situ conservation approaches that can inform similar initiatives currently being developed for other threatened elasmobranch species.



Figure 4.2. Key Activities of the StAR Indonesia Project: Indo-Pacific Leopard Shark Rearing, Release, and Community Engagement in Raja Ampat

Impact report:

<https://static1.squarespace.com/static/61a672c36f344c078b8d4a61/t/6820414f3fb75f3472eae7c5/1746944404231/ReShark+5-Year+Impact+Report.pdf>

Videos: <https://www.res shark.org/videos>

Indicator Data

Headline Indicator A.3 Red List Index

- No data available
- The Headline Indicator A.3 is not yet applicable, as Indonesia is still in the process of developing its National Red List Index. However, species conservation efforts are on track under National Biodiversity Target 4. Indonesia has adopted a prioritization approach to address its exceptionally high species diversity, supported by the development and implementation of Species Conservation Action Plans (*Strategi dan Rencana Aksi Konservasi/SRAKs*) and National Action Plans (*Rencana Aksi Nasional/RANs*) for priority terrestrial and aquatic species. National Red List assessments have progressed for several key taxa, including endemic mammals, birds, orchids, and primates, laying the groundwork for a future National Red List Index.

Indonesia is advancing species conservation through a structured prioritization approach, recognizing the challenges posed by its vast geographic scale and exceptionally high species diversity. National Red List assessments have been completed for 11 *Macaca* species, 1 banteng species, 3 endemic Sulawesi wild pig species, 542 endemic bird species, and 120 endemic orchid species, with further assessments planned for amphibians and molluscs. While a national Red List Index is still under development, interim reporting based on global IUCN assessments indicates Red List Index values ranging from 0.75 to 0.78, with a national calculation of 0.90 for all assessed species and 0.83 for endemic species, reflecting ongoing national efforts to strengthen species conservation and reduce extinction risk.

Headline Indicator A.4 Proportion of populations within species with an effective population size greater than 500

- No data available
- While Indonesia is not yet able to fully report on this headline indicator, a number of concrete efforts have already been undertaken. These include strengthening the conservation of genetic diversity, particularly for domesticated species, through the development of germplasm systems, livestock breeding units, and genetic conservation banks. As of 2025, 120 livestock breeds have been conserved and registered in FAO’s Domestic Animal Diversity Information System (DAD-IS), supported by 20 artificial insemination centers and one livestock embryo center functioning as national genetic conservation facilities. In addition, 120 livestock breeds were officially protected between 2010 and 2025, while 802 plant varieties were protected between 2020 and 2025, consisting of 213 food crop varieties, 519 horticultural varieties, and 70 plantation crop varieties. These efforts contribute to food security, climate resilience, and sustainable production systems, while supporting the maintenance of effective population sizes and the long-term safeguarding of genetic diversity.

National Indicator 4.a National Red List Assessment Index

- No data available
- This indicator is considered a long-term national indicator. The foundational step is to conduct National Red List Assessments, which will subsequently enable the calculation of the index.

National Biodiversity Target 5

Reducing the Introduction and Establishment of Invasive Alien Species



KMGBF GOAL A

Protect and Restore



KMGBF Target 6

Sustainable Development Goals



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Main actions taken to implement the target

Implementation of National Biodiversity Target 5 focuses on reducing the introduction and establishment of invasive alien species. Under the IBSAP 2025–2045, these efforts are organized into four action groups, as follows:

- 5.1 Identification of invasive alien species that threaten terrestrial, inland water, and marine ecosystems;
- 5.2 Preventing the introduction of invasive alien species;
- 5.3 Control and management of the impact of invasive alien species; and
- 5.4 Strengthening policies and regulations to control invasive alien species.



Summary of progress towards the target, including the main outcomes achieved

Indonesia has established a robust and coherent legal and institutional framework to prevent, detect, and control the threats posed by Invasive Alien Species (IAS), recognizing their significant potential impacts on ecosystems, native biodiversity, and the national economy. The national approach integrates risk analysis, regulatory strengthening, enhanced pre-border measures, quarantine surveillance, and systematic mapping and management of invasive species across terrestrial, freshwater, and marine ecosystems.

A strong legal foundation underpins these efforts. [Law No. 21/2019](#) on Animal, Fish, and Plant Quarantine, together with its implementing regulation, [Government Regulation No. 29/2023](#), provide comprehensive mechanisms for preventing the entry, movement, and release of high-risk species into and within Indonesia's territory.

Preventive measures and quarantine surveillance to address the introduction of IAS in Indonesia have been implemented systematically through collaboration among relevant ministries and agencies. A pre-border control approach serves as a key strategy to minimize the risk of invasive species introduction before entry into Indonesia's territory. This is demonstrated through concrete actions, including the establishment of a prohibition list comprising 152 potentially invasive fish species in 2014, which was revised to 81 species in 2020 based on the latest risk assessments. Meanwhile, the Indonesian Agricultural Quarantine Agency (*Badan Karantina Indonesia/Barantin*) undertakes monitoring functions and maintains a database on the trade of potentially invasive species, recording the types and number of individuals each year to identify trends and detect emerging threats. The synergy between these institutions reflects a risk-based preventive approach that forms an essential foundation for safeguarding Indonesia's biodiversity from cross-border biological invasion threats.

Non-State Actors (NSAs) contribute to the achievement of National Target 5 through efforts aimed at reducing the introduction, spread, and establishment of invasive alien species. Their support includes activities such as restoration of areas dominated by invasive species, habitat rehabilitation, and collaboration in strengthening prevention and management measures.

Stakeholders contributing to this target include the Indonesian Quarantine Agency (Barantin), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Transportation (Kemenhub), the National Research and Innovation Agency (BRIN), the Ministry of Trade (Kemendag), and Local Governments (Provincial and City/Regency), private sectors, and non-state actors such as PT. Restorasi Ekosistem Indonesia and Asosiasi Pengusaha Hutan Indonesia.

Main Outcomes Achieved

Headline Indicator 6.1 — Rate of invasive alien species establishment

As detailed above, available datasets provide partial coverage, and additional information is needed in several areas, including:

- 1. rates of IAS introduction on land;
- 2. the extent of terrestrial and marine areas affected; and
- 3. ecosystem-level impacts and spread dynamics.

As a result, the calculation of the rate of IAS establishment and trend analysis over the reporting period cannot yet be undertaken.

National Indicator 5.a — Number of invasive alien species prioritized for control of their spread

Indonesia has positioned risk analysis and capacity strengthening as key components of its efforts to control IAS. To date, a total of 26 IAS risk analysis documents have been developed, serving as the basis for assessing the level of threat posed by invasive species to local ecosystems and for determining management priorities.

As of 2024, approximately 34 priority IAS have been identified based on the IAS risk analysis documents. According to the Regulation of the Minister of Environment and Forestry No. 94/2016 on Invasive Species, 24 of these species are not yet listed in the Annex to the Regulation. In such cases, for species not included in the Annex, their invasive risk status is determined through a Decree issued by the Director General of Natural Resources and Ecosystem Conservation (KSDAE).

For aquatic biota, the government has established a prohibition on the importation, cultivation, distribution, and export of fish species that are harmful and/or detrimental into and out of Indonesian territory. A total of six harmful fish species and 75 detrimental fish species have been designated and prioritized for control to prevent their further spread.

The results of the IAS risk analysis serve as the basis for implementing ecosystem restoration activities through the development of Ecosystem Recovery Plans (*Rencana Pemulihan Ekosistem/RPE*). These activities have been carried out by several conservation area management units, including the Jakarta Natural Resources Conservation Agency (*Balai Konservasi Sumber Daya Alam/BKSDA*) Office (Pulau Rambut Wildlife Reserve and Muara Angke Nature Reserve), Baluran National Park, Wasur National Park, and Kelimutu National Park.

Summary of key challenges encountered and different approaches that may be taken for further implementation

- 1. Data
Current progress in IAS management in Indonesia demonstrates important initial steps; however, further strengthening is needed to fully support National Target 5 and KMGBF Target 6. In particular, comprehensive baseline data and an agreed reference period are not yet available, both of which are essential for calculating the rate of IAS establishment and monitoring long-term trends. Without these elements, the ability to produce robust national assessments aligned with global reporting standards remains limited.

- 2. Infrastructure
A nationally integrated data system remains an important component of effective IAS management. Consolidating IAS-related information from multiple agencies into a single platform would support harmonized reporting on taxonomy, introduction pathways, distribution, and impacts. Such a system would need to be GRIIS-compatible and interoperable, supported by clear institutional arrangements, including a multi-agency task force with defined authority, and complemented by an update of the 2015 National Strategy on IAS to reflect current priorities and global frameworks.
- 3. Human Resource Capacity
Effective IAS management relies on adequate human resources across institutions, particularly among technical staff and quarantine officers responsible for species identification and response at points of entry. Current capacity varies across regions and sectors, highlighting the importance of continued investment in training, standardized operating procedures (SOPs), and the development of rapid-response teams. Strengthening Early Detection and Rapid Response (EDRR) mechanisms remains essential to improving timely and coordinated action.
- 4. Science and Technology
The application of science and technology plays an increasingly important role in strengthening IAS management. Opportunities remain to further expand the use of monitoring technologies, predictive modeling tools, and biological control methods to support evidence-based decision-making. Continued development and application of these tools would enhance the effectiveness and efficiency of IAS prevention, detection, and control efforts.
- 5. Institutional (Including Coordination)
Institutional arrangements for IAS management involve multiple sectors and levels of government. While coordination mechanisms are in place, greater cross-sectoral collaboration is needed to support more coherent planning and implementation, particularly in relation to trade, agriculture, and transport, which represent key pathways for IAS introduction. Enhanced engagement with the private sector and local communities would further strengthen collective action and shared responsibility.
- 6. Financial
Sustained progress in IAS management depends on the availability of adequate and predictable financial resources. Long-term funding is required to support monitoring systems, rapid response mechanisms, capacity development, technology deployment, and stakeholder engagement. Strengthening financial support across these areas will be important to achieving measurable reductions in IAS introductions and impacts over time.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Eradication and Control Measures for *Vachellia nilotica* in Baluran National Park, East Java

Baluran National Park has identified *Vachellia nilotica* as a priority invasive species for control due to its extensive invasion of the park's native savanna ecosystem. Between 2017 and 2019, approximately 300 ha of *Vachellia nilotica* stands were successfully eradicated. Several control methods have been applied in the park, including stem brushing, stump brushing, and cut-and-burn techniques.

<https://smujo.id/biodiv/article/view/4373>

<https://journal.biotrop.org/index.php/biodivers/article/view/2168>

https://forisinvasivespeciessea.files.wordpress.com/2019/07/9_controlling-and-restoration-from-acacia-nilotica-invasion-bookind.pdf.

Release of *Arapaima gigas* in the Brantas River, East Java

The release of *Arapaima gigas* into the Brantas River in 2018 prompted immediate action by local communities and authorities to capture the fish. This response demonstrated public compliance with government regulations prohibiting the cultivation of arapaima due to its potential to become an invasive species. The rapid action taken was also intended to protect native Indonesian fish species from the risk of extinction. Ministry of Marine Affairs and Fisheries Regulation No. 19/Permen-KP/2020 strictly prohibits the keeping of *Arapaima gigas*, a species originating from the Amazon River, in Indonesia. (<https://suryadutainternasional.com/alasan-ikan-aparaima-dilarang/>).

Red Devil Fish as an Invasive Alien Species in Inland Waters of Indonesia

In inland waters, research on the Red Devil fish (*Amphilophus* spp.) in the Sermo Reservoir, Yogyakarta, shows that this species has dominated local fish communities and exhibits invasive characteristics that may suppress native species. The study analyzed thousands of individuals as a basis for population control and underscores the importance of monitoring IAS in freshwater ecosystems. However, such data remain dispersed across various institutions and are not yet integrated at the national level, limiting their use for assessing IAS spread. Regular monitoring is therefore needed to enable more effective control measures.

(<https://www.researchgate.net/publication/369269116>).

Indicator Data

Headline Indicator 6.1 Rate of invasive alien species establishment

No data available

Data are not yet available for the current reporting period, as national monitoring systems currently prioritize prevention and quarantine surveillance of IAS introductions, and standardized data to quantify establishment rates in natural ecosystems are still being developed.

Binary Indicator 6.b Number of countries adopting relevant regulations, processes, and measures to reduce the impacts of invasive alien species

6.1 Does your country have regulations and processes that empower relevant institutions to implement the measures necessary to reduce the introduction and impacts of invasive alien species?

Partially

6.2 Does your country have measures in place to prevent the introduction and establishment of invasive alien species?

Fully

6.3 Does your country have measures in place to eradicate or control invasive alien species?

Partially

Comments

The Government of Indonesia has established a strong and integrated legal framework to prevent and control threats posed by invasive alien species (IAS), which have the potential to generate negative impacts on the environment, biodiversity, and the national economy. These efforts are implemented through a range of regulatory instruments covering quarantine measures, surveillance systems, restrictions on the introduction of hazardous species, and integrated monitoring and quarantine actions.

The primary legal foundation is provided by Law No. 21/2019 on Animal, Fish, and Plant Quarantine, which significantly expands the scope of oversight carried out by the Indonesian Quarantine Agency (Badan Karantina Indonesia). This expanded scope includes genetically modified products, genetic resources, invasive alien species, wildlife, and endangered species. Through an integrated and risk-based mandate, the Agency serves as the frontline authority responsible for overseeing the movement of animals, plants, agricultural products, and other carrier media at national entry and exit points.

The establishment of this framework strengthens Indonesia’s national capacity to meet its international commitments, including those under the Convention on Biological Diversity (CBD) and KMGBF Target 6, while ensuring that early detection, rapid response, and control measures for invasive alien species are implemented in a more coordinated, effective, and adaptive manner.

National Indicator 5.a. Number of invasive alien species prioritized for control of their spread

Use national data set

Indicator	Year	Unit	Value	Footnote
5.a. Number of invasive alien species prioritized for control of their spread	2024	Number	34	Based on the IAS risk analysis document

National Biodiversity Target 6

Reducing the risks and negative impacts of environmental pollution on biodiversity



KMGBF GOAL A

Protect and Restore



KMGBF Target 6



Sustainable Development Goals



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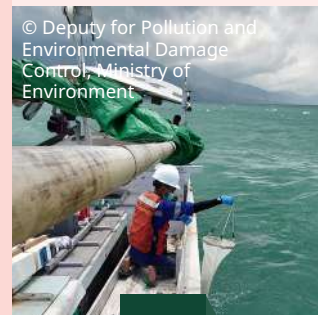
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Main actions taken to implement the target

Implementation of National Biodiversity Target 6 focuses on addressing major pollution sources across terrestrial, inland water, and marine ecosystems. Under the IBSAP 2025–2045, these efforts are organized into five action groups, as follows:

- 6.1 Management of liquid-waste pollution discharged into the environment;
- 6.2 Management of plastic waste in marine and inland waters;
- 6.3 Control of pesticide use;
- 6.4 Monitoring and management of eutrophication; and
- 6.5 Identification of marine debris impacts on biodiversity.



Summary of progress towards the target, including the main outcomes achieved

National Biodiversity Target 6 focuses on reducing pollution from wastewater, plastic debris, agricultural chemicals, and nutrient enrichment that directly affect terrestrial, inland water, coastal, and marine ecosystems. Progress is supported by strengthened policy frameworks, improved monitoring systems, and expanded implementation across sectors.

Pollution control in terrestrial and inland water systems is assessed through the Water Quality Index (*Indeks Kualitas Air/IKA*), which forms part of the Environmental Quality Index (*Indeks Kualitas Lingkungan Hidup/IKLH*) established under the Minister of Environment and Forestry Regulation No. 27/2021. This regulation provides a nationally standardized methodology for evaluating environmental quality and enables consistent tracking of pollution-control performance across watersheds. The index is informed by an expanded monitoring network that includes more than 800 observation points and an automated system through the [Online Continuous Water Quality Monitoring Locations](#) (Onlimo) that offers real-time water-quality measurements and functions as an early-warning mechanism for pollution events. The network of Onlimo units has expanded over the past decade, particularly across priority watersheds, and all units are integrated into the national monitoring platform. The distribution of Onlimo stations established between 2015 and 2024 is shown in **Figure 6.1**.

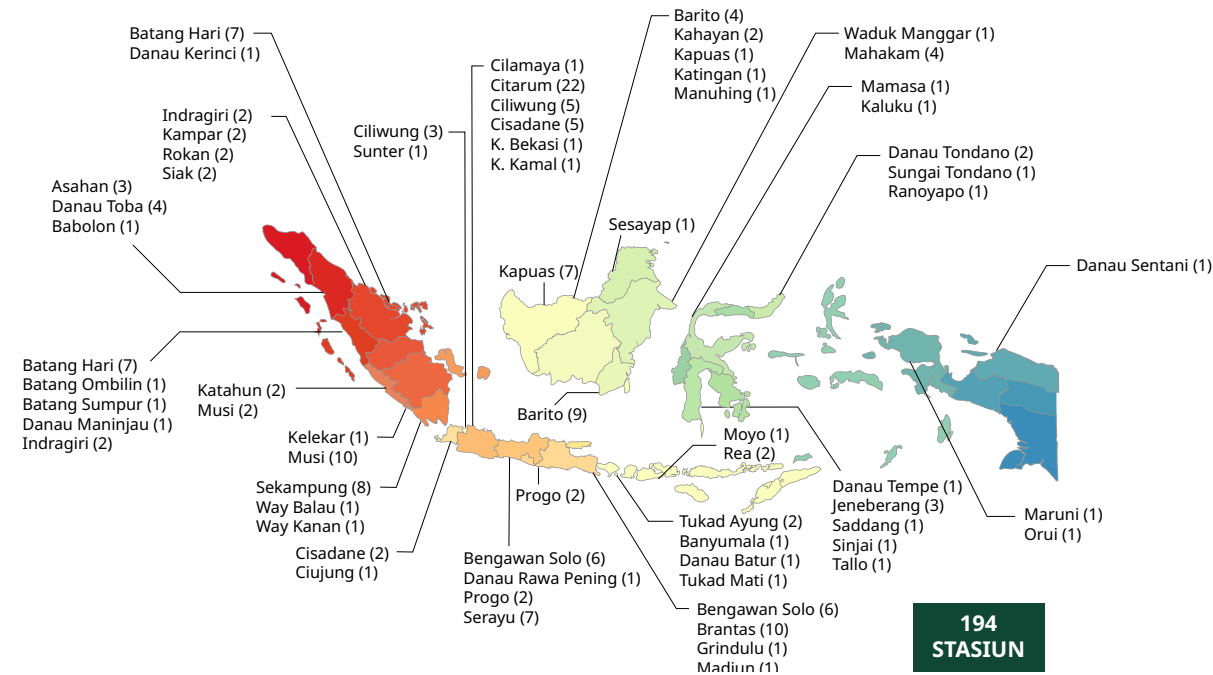


Figure 6.1. Distribution of Online Continuous Water Quality Monitoring Locations (Onlimo)

Water-quality improvement efforts are implemented through a combination of wastewater-management systems, including domestic wastewater treatment facilities (*Instalasi Pengelolaan Air Limbah/IPAL*), livestock waste digesters, and community-based treatment units, along with regulatory mechanisms such as pollutant-load-based discharge permits and coordinated enforcement between national and local governments. Priority actions emphasize reducing pollutant loads at the source, expanding wastewater-treatment coverage, restoring degraded water bodies, and strengthening continuous monitoring of rivers and lakes.

Marine pollution control is guided by the National Action Plan on Marine Debris Management (*Rencana Aksi Nasional Penanganan Sampah Laut/RAN PSL*) 2018–2025, established under [Presidential Regulation No. 83/2018](#). Coordinated by the National Coordination Team for Marine Debris Management (*Tim Koordinasi Nasional Penanganan Sampah Laut/TKN PSL*), a cross-ministerial platform involving 22 ministries and agencies, RAN PSL operationalizes five national strategies and nearly 60 action programs addressing both land-based and sea-based pollution. These include the development of waste-management infrastructure, regulatory enforcement, awareness campaigns, financing mechanisms, and research and innovation for marine debris reduction. The plan has contributed to measurable declines in plastic leakage and strengthened collaboration with local governments and private sectors. Monitoring of macro-, meso-, and microplastic debris has expanded to 24 of 38 provinces, providing an improved understanding of marine-litter trends. A post-2025 marine-debris action plan is currently being developed, aligned with Indonesia’s Golden Vision 2045, the Global Plastic Treaty process, and the national Net Zero Emission 2050 agenda.

Pollution trends in marine ecosystems are also monitored through the Sea Water Quality Index (*Indeks Kualitas Air Laut/IKAL*), developed under the IKLH framework. IKAL is calculated using five key parameters: TSS, DO, Oil and Grease, Total Ammonia, and Orthophosphate, and is used nationally to evaluate coastal and marine water quality.

Pollution from agricultural chemicals is managed through a comprehensive regulatory and monitoring framework designed to minimize ecological and human-health risks. The [national pesticide registration system](#), governed by Minister of Agriculture Regulation No. 43/2019, implements risk-based procedures requiring toxicological and environmental testing for all registered products and restricts the use of active ingredients classified as highly hazardous or persistent organic pollutants. Oversight is carried out by the Pesticide Commission and the Fertilizer and Pesticide Control Commission (*Komisi Pengawasan Pupuk dan Pestisida/KP3*), which coordinate compliance at national and local levels.

Non-State Actors (NSAs) and private sector entities contribute to National Target 6 by supporting efforts to reduce the risks and negative impacts of environmental pollution on biodiversity. Their contributions include activities such as data collection and reporting on marine litter, implementation of clean-up and environmental education initiatives, promotion of sustainable chemical and pesticide management, environmental quality monitoring, wastewater treatment improvements, waste management training, and pollution response measures. These efforts complement government actions in strengthening pollution control systems and reducing pressures on terrestrial, freshwater, and marine ecosystems.

Implementation of this target involves collaboration among the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Public Works and Housing (KemenPU), Statistics Indonesia (BPS), the Ministry of Transportation (Kemenhub), the National Research and Innovation Agency (BRIN), the Maritime Security Agency (Bakamla), Local Governments (Provincial and City/Regency), Tim Koordinasi Nasional Penanganan Sampah Laut (TKN PSL), and Non-State Actors such as Yayasan KEHATI, Burung Indonesia, CropLife Indonesia, Gabungan Pengusaha Kelapa Sawit Indonesia, PT. Bintang Indokarya Gemilang, PT. Global Way Indonesia, PT. Pertamina Patra Niaga AFT Ahmad Yani, as well as coastal community groups, youth networks, NGOs, and private-sectors involved in marine debris reduction and monitoring.

Main Outcomes Achieved

National Biodiversity Target 6 is monitored through two GBF headline indicators (7.1 and 7.2) alongside four national indicators, Water Quality Index (IKA), Sea Water Quality Index (IKAL), percentage reduction of plastic waste leaked to the ocean, and pesticide-use intensity (under development). Overall progress reflects strengthened pollution-control measures, expanded monitoring systems, and increased cross-sector collaboration, although several indicators remain in early development stages.

Headline Indicator 7.1 – Index of Coastal Eutrophication Potential

Indonesia does not yet generate Index of Coastal Eutrophication Potential values due to the absence of river-to-coast nutrient-load calculations (N, P, Si) and coastal eutrophication modelling required by the GBF methodology. However, relevant parameters such as Total Nitrogen, Total Phosphate, chlorophyll-a, and water transparency are regularly collected for rivers, lakes, and selected coastal sites. These data provide an important scientific basis for developing a national eutrophication index in future reporting cycles.

Headline Indicator 7.2 – Aggregated Total Applied Toxicity

Systematic national monitoring of pesticide residues in water, soil, or sediments has not yet been established; therefore, Indonesia cannot currently report on Aggregated Total Applied Toxicity or environmental concentration values. As an interim measure, pesticide registration and usage data, including more than 5,000 registered products across insecticides, herbicides, and fungicides, serve as an initial reference point for assessing trends in chemical inputs.

National Indicator 6.a – Water Quality Index

The Water Quality Index is derived from water quality monitoring conducted at strategically selected sampling locations. These include upstream river sections considered minimally affected by human activities, outlets of major river basins, raw water intake points for drinking water treatment, and sites representing both point and non-point pollution sources. Sampling locations are designed to be representative of upstream, middle, and downstream segments within administrative areas, ensuring national comparability.

Over the 2020–2024 period, National Water Quality Index values remained in the “moderate” category (50 < IKA < 70), fluctuating from 53.53 (2020) to 52.82 (2021) and gradually increasing to 54.78 (2024), indicating inland water conditions that remain under pressure but show incremental improvement ([Data Ministry of Environment and Forestry, 2024](#))

Progress toward target water quality levels remains gradual, reflecting persistently high pollution loads, particularly from domestic wastewater, industrial activities (including large industries and small-scale enterprises), and non-point sources such as agriculture and livestock activities. Limited domestic wastewater management coverage, serving less than 50% of the population nationally, continues to make domestic effluent a dominant pollution source in many rivers. Nonetheless, recent improvements are supported by strengthened wastewater management efforts, expanded Onlimo monitoring coverage, and enhanced river-basin-based monitoring and management.

National Indicator 6.b – Sea Water Quality Index

The Marine Water Quality Index is derived from water quality monitoring conducted at selected coastal and marine locations, including major river estuaries, areas potentially affected by land-based and marine activities, and ecologically important marine ecosystems such as mangroves, coral reefs, seagrass meadows, and estuaries. Sea-water quality remained in the “good” category (70 < IKAL < 90) over the 2020–2024 period, with values improving from 68.94 (2020) to 81.67 (2024). The upward trend indicates measurable improvements in coastal water conditions, supported by pollution-response activities, marine-debris reduction efforts, port-area monitoring, and strengthened coordination among coastal authorities.

National Indicator 6.c – Percentage Reduction of Plastic Waste Leaked to the Ocean

Indonesia recorded a significant reduction in marine plastic leakage, decreasing from –8.06% in 2019 to –41.68% in 2023 relative to the 2018 baseline. Total estimated leakage declined from 615,674 tons (2018) to 359,061 tons (2023). These improvements reflect the implementation of the National Action Plan on Marine Debris Management (RAN PSL), the expansion of waste-management infrastructure, behavioral-change campaigns, and increased collaboration between government, communities, and the private sector.

National Indicator 6.d – Pesticide-Use Intensity (Under Development)

The national indicator for pesticide-use intensity (ton/ha) is still under development. Available data show that registered pesticide products increased gradually between 2016 and 2024, reflecting tightened regulatory oversight and periodic review of active ingredients. Indonesia is improving data systems for pesticide registration, promoting Integrated Pest Management, and preparing the foundation required for future development of a quantitative pesticide-use intensity indicator aligned with KMGBF Headline Indicator.



Summary of key challenges encountered and different approaches that may be taken for further implementation

1. Policy and Regulation

Indonesia continues to strengthen its efforts to address major pollution sources across terrestrial, inland-water, and marine ecosystems. Existing regulations provide the basis for managing pollution from chemicals, waste, and wastewater; however, periodic review and regulatory harmonization remain necessary. In pesticide control, continued alignment with international conventions and the regulation of active ingredients is required. In plastic management, regulatory revisions are needed to recognize waste management as a basic service and to strengthen enforcement of Extended Producer Responsibility.

2. Human Resource Capacity

Human resource capacity for pollution monitoring and management remains uneven across regions. Technical expertise gaps persist, particularly in nutrient-load monitoring, toxicity analysis, pesticide risk assessment, and marine debris surveys. To address this, Indonesia is expanding capacity-building programs, cross-sectoral workshops, and specialized training in collaboration with the National Research and Innovation Agency (BRIN), universities, and regional governments to accelerate data collection and improve analytical capabilities

3. Financial

Addressing pollution sources requires substantial and sustained investment, particularly in wastewater treatment infrastructure, plastic-waste management systems, nutrient-runoff control, and laboratory capacity. To support these needs, Indonesia is mobilizing blended financing mechanisms, international partnerships, and circular-economy-based funding approaches to complement national budget allocations.

4. Science and Technology

Science and technology play a critical role in improving pollution monitoring and indicator calculation. Gaps remain in core datasets required to calculate Target 7 indicators, including incomplete nutrient-load measurements (N, P, Si) at river mouths for ICEP calculations and the absence of comprehensive toxicity profiles and active-ingredient inventories needed for the ATAT indicator. In response, Indonesia

is scaling up the use of real-time monitoring sensors, remote sensing for eutrophication detection, molecular tools for pollutant tracing, and the development of proxy indicators, such as pesticide-use intensity per hectare, while full ATAT calculations are being prepared.

5. Infrastructure

Infrastructure gaps remain, including the uneven distribution of wastewater treatment plants, nutrient-monitoring stations, certified laboratories, and coastal monitoring systems. These gaps are being addressed through planned expansion of river-basin monitoring facilities, upgrades to waste-management and recycling systems, and strengthened observation networks in marine protected areas. Through these combined measures, particularly the development of integrated nutrient and pesticide monitoring systems and enhanced technical capacity for ICEP and ATAT calculations, Indonesia aims to improve the accuracy of pollution-related indicators and accelerate progress toward achieving KMGBF Target 7.



Examples or cases to illustrate the effectiveness of the actions taken to implement the target

The Sea Love Month (*Bulan Cinta Laut*) program

The Sea Love Month (*Bulan Cinta Laut*) program has emerged as one of Indonesia’s flagship best practices for addressing marine plastic pollution through community-based action and fisher participation. Launched by the Ministry of Marine Affairs and Fisheries (KKP) in 2022 as one of five Blue Economy priority programs, it is designed as a national campaign that dedicates one month each year to mobilizing small-scale fishers to collect marine litter, especially plastics, while at sea and bring it ashore alongside their catch. Under this “fisher participation movement,” plastic and other waste brought back by fishers is weighed, recorded, and valued. In many locations, rewards or economic incentives are provided, helping to foster a local circular economy while reinforcing the message that a clean ocean underpins long-term fisheries productivity and coastal livelihoods. The program directly supports Indonesia’s National Plan of Action on Marine Debris and the national target to reduce marine plastic leakage by 70% by 2025 under Presidential Regulation No. 83/2018, as well as the longer-term vision of plastic-free seas by 2040.

In terms of measurable results, *Bulan Cinta Laut* has scaled up rapidly. By the end of 2023, the National Movement (Gernas BCL) had been implemented in 36 districts/cities, collecting 261.22 tons of marine litter with the active participation of 2,858 fishers across Indonesia. By August 2024, cumulative implementation had mobilized 4,621 fishers and removed approximately 1,005.82 tons of coastal and marine waste from Indonesian waters, signaling a significant contribution to national marine debris reduction targets. Local examples illustrate how the model operates in practice: clean-up actions in Belitung collected 852 kg of waste (350 kg of plastic) during a single BCL event, while early activities in Pacitan in 2022 collected 1.4 tons of waste in one day. The program is embedded within a broader community-based framework, including the Clean Coastal Village (*Desa Pesisir Bersih*) initiative, and is explicitly designed to promote behavioral change among fishers and coastal communities, transforming them from passive victims of marine debris into active partners in restoring ocean health. As such, *Bulan Cinta Laut* can be highlighted in national reporting as a concrete circular-economy-oriented best practice: it translates high-level marine debris targets into a repeatable, data-driven, and socially inclusive mechanism in which thousands of fishers regularly bring back plastic “bycatch” from the sea, contributing both to pollution reduction and to strengthened local livelihoods.

Key reference sources

- Kementerian Kelautan dan Perikanan – *Menteri Trenggono sebut BCL berhasil bangun sinergitas pengelolaan sampah plastik di laut* (news release, 30 August 2024).
- Kementerian Kelautan dan Perikanan – *KKP Kick Off Gernas Bulan Cinta Laut 2024* (news release, 10 May 2024).
- KKP Policy Page – *Penanganan Sampah Plastik di Laut melalui Gerakan Partisipasi Nelayan atau Bulan Cinta Laut (BCL)* (Blue Economy priority policy).
- KKP – *Kebijakan Ekonomi Biru* (presentation PDF outlining Bulan Cinta Laut as a fisher-participation movement and a one-month-per-year clean-up campaign).
- Mongabay Indonesia – *Bulan Cinta Laut 2024 targetkan pembersihan 200 ton sampah laut* (background on targets, fisher participation, and economic value of collected waste).
- News reports and local implementation examples (Belitung, Pacitan, regional campaigns under Gernas BCL).

Indicator Data

Headline Indicator 7.1 Index of coastal eutrophication

- No data available
- Indonesia does not yet generate an index of coastal eutrophication values due to the absence of river-to-coast nutrient-load calculations (N, P, Si) and coastal eutrophication modelling required by the GBF methodology. However, relevant parameters such as Total Nitrogen, Total Phosphate, chlorophyll-a, and water transparency are regularly collected for rivers, lakes, and selected coastal sites. These data provide an important scientific basis for developing a national eutrophication index in future reporting cycles.

Headline Indicator 7.2 Pesticide environment concentration and/or aggregated total applied toxicity

- No data available
- Systematic national monitoring of pesticide residues in water, soil, or sediments has not yet been established. Therefore, as an interim measure, pesticide registration and usage data, including more than 5,000 registered products across insecticides, herbicides, and fungicides, serve as an initial reference point for assessing trends in chemical inputs.

National Indicator 6.a Water Quality Index

Use national data set

Indicator	Year	Unit	Value	Footnote
6.a Water Quality Index	2024	Index	54.78	
	2023	Index	54.59	
	2022	Index	53.88	
	2021	Index	52.82	
	2020	Index	53.53	

Note: Very Good (90 ≤ x ≤ 100), Good (70 ≤ x < 90), Moderate (50 ≤ x < 70), Poor (25 ≤ x < 50), and Very Poor (0 ≤ x < 25)

The index is based on parameters such as Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Suspended Solids, Dissolved Oxygen, Total Phosphate, Faecal Coliform, pH, and Nitrate.

National Indicator 6.b Sea Water Quality Index

Use national data set

Indicator	Year	Unit	Value	Footnote
6.b Sea Water Quality Index	2024	Index	81.67	
	2023	Index	78.84	
	2022	Index	82.02	
	2021	Index	81.04	
	2020	Index	68.94	

Note: Very Good (90 ≤ x ≤ 100), Good (70 ≤ x < 90), Moderate (50 ≤ x < 70), Poor (25 ≤ x < 50), and Very Poor (0 ≤ x < 25)

The index is based on the use of the following parameters: Total Suspended Solids, Dissolved Oxygen, Oil and Grease, Total Phosphate, Faecal Coliform, pH, and Nitrate.

National Indicator 6.c Percentage reduction of plastic waste leaked to the ocean

Use national data set

Indicator	Year	Unit	Value	Footnote
6.c Percentage reduction of plastic waste leaked to the ocean	2023	Percent	-41.68	
	2022	Percent	-35.36	
	2021	Percent	-28.52	
	2020	Percent	-15.29	
	2019	Percent	-8.06	

Note: The baseline year (2018) recorded a total estimated leakage of 615,674 tons

National Indicator 6.d Pesticide-use intensity

- No data available
- The national indicator for pesticide-use intensity (ton/ha) is not yet available. Available data show that registered pesticide products increased gradually between 2016 and 2024, reflecting tightened regulatory oversight and periodic review of active ingredients.

National Biodiversity Target 7

Reducing risks and enhancing biodiversity resilience to climate change impacts

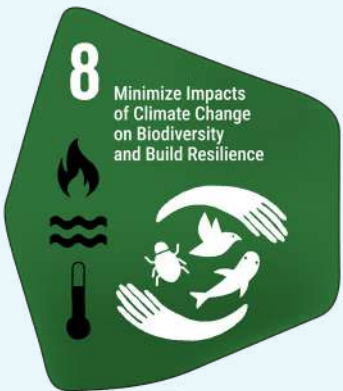


KMGBF GOAL A

Protect and Restore



KMGBF Target 8



Sustainable Development Goals



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Main actions taken to implement the target

Implementation of National Biodiversity Target 7 focuses on reducing risk and strengthening resilience to the impact of climate change on biodiversity. Under the IBSAP 2025–2045, these efforts are organized into three action groups, as follow:

- 7.1 Identification and management of climate-change impacts on biodiversity;
- 7.2 Reducing greenhouse gas emissions in land-use sectors; and
- 7.3 Monitoring the impacts of ocean warming and acidification.



Summary of progress towards the target, including the main outcomes achieved

Indonesia has made substantial progress in assessing and managing the impacts of climate change on biodiversity, expanding the scope of earlier work undertaken under the sixth National Report (NATREP 6). Building on climate-risk studies conducted for marine and coastal ecosystems, including habitat rehabilitation assessments, blue-carbon ecosystem evaluations, and coastal community resilience analyses. Indonesia has progressively developed more targeted approaches for identifying vulnerable species and ecosystems. The establishment of climate-scenario models for 15 regions, alongside the development of the Vulnerability Index Information System ([SIDIK](#)), has strengthened the country's capacity to integrate climate-risk data with biodiversity management. The National Adaptation Plan (*Rencana Aksi Nasional Adaptasi Perubahan Iklim/ RAN-API*) covers sectors critical to biodiversity, including water resources, coastal and marine, agriculture, and health, providing a coherent framework for climate-informed conservation planning.

To advance national climate action, Indonesia has developed the Enhanced Nationally Determined Contribution (E-NDC) Mitigation Roadmap, which serves as a key reference for achieving sectoral emission-reduction targets while safeguarding ecological integrity. This work is further supported by the issuance of [Minister of Environment and Forestry Regulation No. 12/2024](#) on the implementation of nationally determined contributions for climate action, which provides the regulatory framework to coordinate and operationalize mitigation measures across relevant sectors.

In parallel, Indonesia has strengthened its capacity to identify climate-related risks to biodiversity through multiple scientific assessments and spatial analyses. These include the development of a [national biodiversity atlas](#), [flood hazard maps](#), the climate vulnerability profile of the [Indonesian Coral Triangle region](#), publications on mangrove vulnerability maps, and peer-reviewed scientific climate change issues. These instruments provide essential data for assessing ecosystem sensitivity, exposure, and adaptive capacity, enabling more targeted and evidence-based interventions.

Indonesia has also initiated the Prospectus of [Blue Carbon Potential](#) as a part of its climate change mitigation effort in the marine sector. This mitigation action focuses on mangrove and seagrass ecosystems. These efforts contribute to the achievement of Indonesia's targets under the Nationally Determined Contribution (NDC) and strengthen both climate mitigation and biodiversity conservation outcomes. Collectively, the results confirm Indonesian's commitment toward a more integrated, multi-sectoral mitigation regime, aligned with its climate and biodiversity.

To reduce greenhouse gas emissions in the forest and land-use sectors, Indonesia has strengthened its forest and land fire prevention and control measures. These efforts include forest and land restoration, particularly in peat ecosystems, integrated patrol operations, enhanced early-warning and detection systems, and supportive climatic conditions such as extreme high rainfall. Collectively, these measures contributed to a substantial reduction in emissions from forest and land fires.

In forest and land ecosystems, peatland restoration has been scaled up through the 3R approach (Rewetting, Revegetation, Revitalization) to reduce fire risk and emissions. Fire-prevention systems have intensified significantly, supported by 2,458 Forest Fire Fighters (Manggala Agni) deployed in 11 provinces and 10,000 Community Fire-prevention Volunteers (*Masyarakat Peduli Api/MPA*) operating across 29 provinces. These interventions directly contributed to major emission reductions from forest and land fires. Based on the fire and land fire monitoring through the [SIPONGI](#) platform, the total extent of forest and land fire areas shows a significant decline from 2018 to 2025, reflecting the impact of these sustained interventions (**Figure 7.1**).

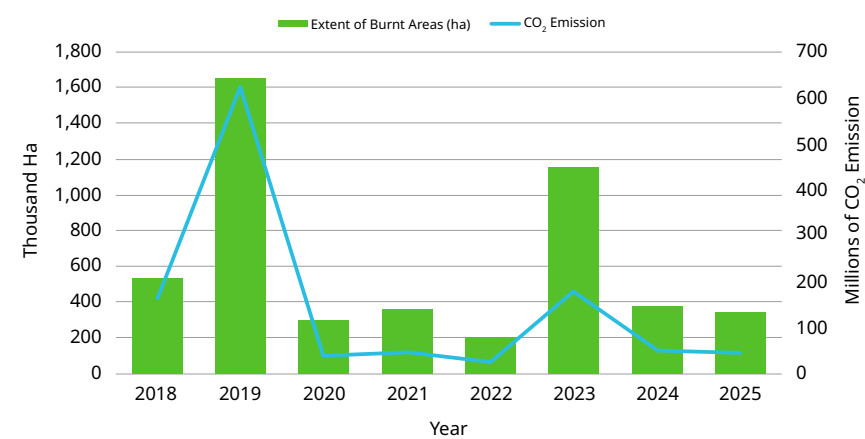


Figure 7.1. Total extent of forest and land fire areas from 2018 - 2025

Source: <https://sipongi.gakkum.kehutan.go.id/>
Emission data source: Directorate of Greenhouse Gas Inventory (IGRK), Directorate General of Climate Change Control (PPI), Ministry of Environment Global Biomass (BG) emission calculations were conducted using an emission factor of 923.1 tons CO₂e per hectare. The extent of forest and land fires was calculated based on an analysis of Landsat 8 OLI/TIRS satellite imagery overlaid with hotspot distribution data, as well as reports from hotspot ground verification and fire suppression activities conducted by Manggala Agni. Input data are available up to October 2025.

In the agriculture sector, preventive measures on land fire include the development of the [SikarLa Padam monitoring platform](#) (*Strategi Pengendalian Kebakaran Lahan Perkebunan – Pastikan Api dan Asap Menghilang*/Agriculture Plantation Fire Control Strategy – Ensuring Fire and Smoke Disappear), as well as the establishment of Farmer Groups on Zero-Burning Land Preparation, aimed at reducing land clearing through burning practices among farmers.

Other adaptation measures have been implemented to reduce the impacts of climate change. This includes the provision of water-management infrastructure such as pumps and wells to secure water availability during droughts, the application of Climate Change Impact Management (*Penerapan Penanganan Dampak Perubahan Iklim/PPDPI*) practices, and the establishment of field demonstration areas as learning models for climate-resilient agriculture. Efforts also include the expansion of climate-resilient intervention areas and the development and rehabilitation of bore wells using solar and diesel technologies. Promotion of low-carbon and sustainable plantation systems is developed through the introduction of low-carbon plantation practices, alongside strengthening adaptation and mitigation efforts. These interventions aim not only to maintain agricultural productivity but also to protect biodiversity from the impacts of climate change and to build long-term ecosystem resilience.

Indonesia has strengthened its monitoring and management responses to ocean warming and acidification, recognizing their increasing threat to coastal biodiversity, fisheries, and national blue-economy priorities. Between 2018 and 2025, extensive monitoring was conducted at 198 locations in 20 provinces, providing robust evidence of bleaching dynamics and enabling targeted local interventions. Of the 12,284 coral colonies monitored, 77% of the colonies were in normal condition, 7% were pale, 10% were bleached, and 6% were dead. This monitoring effort guides early-response actions.

Technological innovation has also expanded, demonstrated by the development of 38 patented technologies addressing coral-bleaching prevention and thermal stress mitigation. This reflects Indonesia's growing commitment to developing domestic solutions to climate-driven marine ecosystem loss. In addition, the formulation of Blue Carbon Action Plans in key conservation areas supports integrated monitoring frameworks for ocean warming, acidification, and blue-carbon ecosystem health, ensuring that scientific observations are translated into policy and management decisions.

Non-State Actors (NSAs) contribute to National Target 7 by supporting efforts to reduce risks and enhance biodiversity resilience to climate change impacts. Their contributions include activities such as assessments of environmentally sensitive areas, support for greenhouse gas reduction and carbon valuation initiatives, forest and peatland restoration, mangrove and peat ecosystem management, and integrated landscape programs that combine habitat protection, biodiversity monitoring, community engagement, and awareness-raising.

Stakeholders contribute to this target include the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the National Research and Innovation Agency (BRIN), the Ministry of Public Works (Kemen PU), the Geospatial Information Agency (BIG), the Meteorology, CLimatology, and Geophysical Agency (BMKG), and Local Governments (Provincial and City/Regency), along with the involvement of non-state actors such as Konservasi Indonesia, Yayasan Madani Berkelanjutan, Fauna & FLora Indonesia, Belantara Foundation, Yayasan Borneo Nature Indonesia, and Yayasan Inisiasi Alam Rehabilitasi Indonesia.

Main Outcomes Achieved

This target is aligned with KMGBF Target 8, “Minimize the Impacts of Climate Change on Biodiversity and Build Resilience”, focused on climate change impact on biodiversity, which has no headline indicator. While this National Biodiversity Target has one main indicator and is implemented into three action groups.

National Indicator 7.a. – Total reduction of Greenhouse Gas (GHG) emissions from the forestry and other land-use sector, the agriculture sector, and the coastal, marine, and fisheries sector.

Based on the [Indonesia Biennial Transparency Report](#) 2024 to the United Nations Framework Convention on Climate Change, it is reported that in 2022, total GHG emissions from forestry and other land-use sectors and the agriculture sector in Indonesia were 447,877.41 kt CO₂e.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Indonesia's efforts to advance climate-change adaptation and biodiversity resilience continue to face several interconnected challenges across policy and regulation, institutional coordination, human resources, financing, science and technology, infrastructure, data and monitoring systems.

- 1. Policy and Regulatory Integration
From a policy and regulatory perspective, climate change issues remain largely addressed through a sectoral approach. As a result, there is a need for an integrated concept in the management and development of biodiversity mainstreaming programs. Moving forward, Indonesia aims to strengthen cross-sectoral policy harmonization through integrated frameworks that link climate resilience with biodiversity conservation, food security, renewable green energy, the economy, technology and infrastructure, and regional development, while also expanding regulatory incentives for sustainable and climate-smart practices.

2. Human Resource Capacity and Stakeholder Engagement
- Human resource capacity remains a key challenge, highlighting the need to broaden engagement to stakeholders from other sectors and areas, including energy, transportation, urban, and metropolitan sectors, in addition to those already operating under a business-as-usual approach.
3. Financial Constraints
- Financing continues to be one of the most significant constraints, as available funding for megadiverse countries remains below the minimum level required to effectively support climate-change adaptation and biodiversity resilience efforts.
4. Science, Research, and Technology
- Science, research, and technology related to climate-change adaptation, including the development and application of new technologies and innovations, require further strengthening. Continuous adaptation efforts are needed alongside mitigation actions. Bridging existing technology gaps is therefore essential to enable more rapid and effective responses to climate-related risks.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Effectiveness of Irrigation Programs for Food Security

The Rehabilitation of Tertiary Irrigation Networks (*Rehabilitasi Jaringan Irigasi Tersier/RJIT*) program of the Indonesian Ministry of Agriculture is a key example of a community-based climate adaptation measure that strengthens the resilience of agricultural systems to climate variability. Through the improvement, upgrading, and construction of tertiary irrigation channels, RJIT enhances water distribution efficiency at the farm level and reduces farmers' vulnerability to droughts, delayed rainfall, and seasonal water shortages. The programme is distinguished by its participatory approach, engaging no less than 158 Farmer Groups (*Kelompok Tani*) and Water User Associations (*Perkumpulan Petani Pemakai Air/P3A*) in planning, implementation, and maintenance, ensuring strong local ownership and sustainability of the irrigation infrastructure.

RJIT directly contributes to KMGBF Target 7 by improving the adaptive capacity of smallholder farming communities, stabilizing crop productivity, and supporting ecosystem-based water management. The improved efficiency of tertiary irrigation also generates mitigation co-benefits by reducing excessive pumping, lowering energy use, and enabling water-saving practices in rice cultivation that help reduce methane emissions. As part of a broader climate-resilient agricultural strategy, RJIT complements national policies such as Indonesia's National Action Plan for Climate Change Adaptation (RAN-API) and the Nationally Determined Contribution (NDC), both of which emphasize irrigation modernization as a priority measure.

References:

- Ministry of Agriculture (Ditjen PSP). Guidelines for the Implementation of RJIT (various years).
- Government of Indonesia. Updated NDC and LTS-LCCR 2050, Ministry of Environment and Forestry (2021).
- The Ministry of National Development Planning/National Development Planning Agency (Bappenas). National Action Plan for Climate Change Adaptation (RAN-API).
- FAO (2020). Water-Saving Technologies in Irrigated Agriculture.

Program Kampung Iklim

Program Kampung Iklim [ProKlim](#) is an initiative designed to enhance community engagement in local climate change mitigation and adaptation efforts. This program engages multiple community stakeholders, such as local governments, community organizations, business entities, and educational institutions, to develop comprehensive climate resilience at the local level.

In Tamansari Village, Banyuwangi, East Java, an agroforestry system is implemented through the cultivation of hardwood and food crops to mitigate erosion, alongside the establishment of a basic irrigation system to secure water supply during the dry season. These actions have enhanced agricultural productivity and generated supplementary income for residents through non-timber forest products.

In Batu Rotok Village, Sumbawa, the implementation of rainwater harvesting technologies and infiltration wells aims to enhance access to clean water. Additionally, the initiative includes the planting of drought-resistant endemic plants and the conservation of water resources. The initiatives have effectively enhanced water accessibility in the dry season and improved community awareness regarding the significance of water conservation and the utilization of local drought-resistant flora. This program mitigates climate risks while enhancing community resilience and improving the quality of life for individuals across diverse regions

Rain Harvesting Community-Based

In Desa Sardonoarjo, Kecamatan Ngaglik, Sleman, Yogyakarta, a small community known as Banyubening has grown into a remarkable example of grassroots environmental leadership. The movement is driven by Mrs. Sri Wahyuningsih, who believes that rain is not merely a seasonal occurrence, but a vital source of life that must be preserved and used wisely. She demonstrates how rainwater harvesting can strengthen climate resilience while supporting biodiversity conservation.

Since 2012, Sri has promoted the idea that rain is not merely a seasonal event but a vital ecological blessing that must be managed wisely. Facing increasing water stress, groundwater depletion, and public skepticism, she combined local wisdom (*ilmu titen*) with scientific reasoning to develop simple yet effective harvesting practices. The first rainfall after a long dry season is allowed to flush debris and pollutants before collection begins, ensuring safer storage. This approach was strengthened through collaboration with Universitas Gadjah Mada, which co-developed the affordable Gama Rain Filter and supported the creation of ISLAH (Rainwater Storage Installation System), framed as a "water savings account" for the dry season.

The initiative contributes directly to climate adaptation by reducing vulnerability to drought and erratic rainfall. Decreasing reliance on groundwater extraction alleviates pressure on surrounding ecosystems, helping maintain soil moisture, vegetation cover, and microhabitats. Water security and biodiversity conservation are thus advanced simultaneously through an ecosystem-based approach.

Beyond technical innovation, Banyu Bening represents social transformation. Women serve as designers and trainers, while youth and persons with disabilities participate actively in outreach and maintenance. Through its three pillars: School, Studio, and Conservation, the community promotes environmental literacy and practical ecological action. The model has been replicated beyond Sleman, including in Palu, where it has been integrated into local green building regulations. From a household initiative to a policy-recognized model, Banyu Bening demonstrates how community-based rainwater harvesting can provide a low-cost, inclusive, and scalable response to climate change, strengthening adaptive capacity while reducing ecological pressure.

<https://www.kemenkopmk.go.id/kemenko-pmk-dorong-pengurangan-risiko-bencana-kekeringan-berbasis-aktualisasi-program-gerakan-panen>

<https://mediacenter.slemankab.go.id/2025/01/10/komunitas-banyu-bening-sleman-sediakan-alternatif-sumber-air-minum-ramah-lingkungan-dan-berkelanjutan/>

<https://magdalene.co/story/sekolah-air-hujan-banyu-bening/>

Indicator Data

Binary Indicator 8.b Number of countries with policies to minimize the impacts of climate change and ocean acidification on biodiversity, and to minimize negative impacts while promoting positive impacts of climate action on biodiversity

8.1 Does your country’s National Biodiversity Strategy and Action Plan include actions to prevent or minimize the impacts of the following? (Select all that apply)

- Climate change
- Ocean acidification

8.2 Do your country’s climate change policies address the impacts of climate change on biodiversity?

Partially

8.3 Do your country’s other policies address the impacts of climate change on biodiversity?

Partially

8.4 Do your country’s other policies address the impacts of ocean acidification on biodiversity?

Under development

8.5 Are the impacts of climate change on biodiversity monitored and reported?

Partially

8.6 Are the impacts of ocean acidification on biodiversity monitored and reported?

Under development

8.7 Do your country’s policies or action plans addressing the impacts of climate change and ocean acidification include the following types of actions aimed at increasing biodiversity resilience or reducing impacts? (Select all that apply)

- Mitigation
- Adaptation

8.8 Do your country’s policies or action plans include measures to minimize the negative impacts of climate actions on biodiversity?

Partially

8.9 Do your country’s policies or action plans include measures to promote positive impacts of climate actions on biodiversity?

Partially

National Indicator 7.a. Total reduction in greenhouse gas (GHG) emissions from the forestry and other land use sector, the agriculture sector, and the coastal, marine, and fisheries sector

Use national data set

Indicator	Year	Unit	Value	Footnote
7.a. Total reduction in greenhouse gas (GHG) emissions from the forestry and other land use sector, the agriculture sector, and the coastal, marine, and fisheries sector	2022	Kt CO ₂ e	447,877.41	

Note: Cumulative GHG emissions from the forestry and other land-use sector and the agriculture sector.

Sustainable Use of Biological Resources for Community Well-Being



Main actions taken to implement the target

The implementation of National Biodiversity Target 8 aims to ensure the sustainable use of biological resources to support the well-being of communities. A set of priority action groups focuses on policy strengthening, community capacity building, species population monitoring, and the promotion of biodiversity-based sustainable practices. The main actions supporting this target include:

- 8.1 Prevention and law enforcement related to poaching, illegal logging, illegal wildlife trade, and illegal, unreported, and unregulated (IUU) fishing;
- 8.2 Capacity building for law enforcement officers in handling biodiversity-related crimes;
- 8.3 Mitigation of spillover risks from wildlife and ecosystem degradation to human health;
- 8.4 Sustainable use and trade regulation of wild flora and fauna, aquatic species, their derivatives, and CITES-listed species;
- 8.5 The utilization of biodiversity based on ecosystem approaches and traditional knowledge by customary and local communities;
- 8.6 Monitoring of impacts from the use of non-listed species (bycatch species);
- 8.7 Strengthening of policies and regulations on food waste, including technical guidelines for food waste management in hotels, restaurants/cafés, and catering businesses;
- 8.8 Utilization of native species as sources of food, medicine, biomaterials, and bioenergy; and
- 8.9 Sustainable use of non-timber forest products.

Summary of progress towards the target, including the main outcomes achieved

The National Biodiversity Target 8 emphasizes that the utilization of biodiversity must deliver balanced economic, social, and ecological benefits, and must be conducted in a legal, sustainable, and equitable manner. The utilization of biological resources in Indonesia continues to increase in line with the growth of biodiversity-based economic sectors, particularly forestry, fisheries, and agriculture.

The economic contribution of the sustainable use of biological resources is significant. In the forestry sector, the determination of wild harvest quotas has been standardized following the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) guidelines, covering both international and domestic uses for research and limited utilization purposes. Coordination among the Scientific Authority (the National Research and Innovation Agency), the Management Authorities (Ministry of Forestry and Ministry of Marine Affairs and Fisheries), and non-state actors has been strengthened through the annual quota-setting forum.

This synergy ensures that every permit for species utilization is based on scientific recommendations and a consultative process involving relevant local stakeholders. Given that the utilization of wild fauna and flora must comply with CITES regulations, the quota determination mechanism has been standardized for over a decade. The calculation of annual harvest quotas considers previous years' realization data, forecasted demand, and scientific population assessments in the wild.

The determination of harvest and wild capture quotas for species, both from breeding facilities and wild populations, respectively, is conducted in accordance with CITES provisions and is categorized into two groups:

Group I: Wild-harvested origin, for which quotas are established based on published scientific data, population surveys, or, in specific cases, through Non-Detriment Findings (NDFs) analysis.



Group II: Captive-bred origin, for which quotas are determined using the Maximum Sustainable Yield (MSY) approach to ensure reproductive capacity and population stability within captivity. For several commercially traded species, breeders are required to maintain and expand captive populations as part of their operational obligations.

The implementation of Social Forestry and Conservation Partnership schemes provides legal access for communities to manage non-timber forest products (NTFPs) and environmental services through community-based institutions. The use of NTFPs provides substantial economic benefits for local communities, particularly from commodities such as honey, eco-tourism, resins, and forest-based handicrafts. In parallel, law enforcement efforts continue to be strengthened, both in terrestrial and marine biodiversity monitoring, to ensure that the utilization of biological resources remains legal, traceable, and sustainable.

For the utilization of marine fisheries resources, Indonesia applies a quota-setting mechanism based on the assessment of biologically safe limits, as determined and formally stipulated by the Minister. Marine capture fisheries quotas are established by resource category, namely demersal fish, coral reef fish, large pelagic fish, and small pelagic fish, as well as squid, shrimp, lobster, blue swimming crab, and mud crab, and are set for five-year management periods.

Under the Measured Fishing Policy (*Penangkapan Ikan Terukur/PIT*), fisheries management in Indonesia is implemented through the Fisheries Management Areas of the Republic of Indonesia (*Wilayah Pengelolaan Perikanan Negara Republik Indonesia/WPPNRI*), which are divided into 11 management areas nationwide. This policy ensures that catch quotas are allocated according to the carrying capacity of fish stocks and are science-based, accompanied by a Vessel Monitoring System and Ecolabel certification to ensure sustainable practices. Catch production is actively monitored to assess and manage fish stock sustainability.

As an example, WPPNRI 712 (Java Sea) is one of these areas and supports a wide range of fisheries commodities, including demersal and pelagic fish, reef fish, crustaceans, and cephalopods. The estimated fishery potential in WPPNRI 712 is derived from scientific stock assessments and serves as a reference for sustainable management, while production data for 2021 reflect actual recorded fisheries catches (**Table 8.1**). Comparison between estimated potential and production indicates varying levels of utilization across commodity groups, highlighting the importance of continued quota-based management, monitoring, and adaptive measures under the PIT framework.

Table 8.1. Estimated Fishery Potential and Actual Production by Commodity in WPPNRI 712

Commodity	Estimated Potential (tons/year)	Actual Production 2021 (tons)
Demersal fish	358,832	487,477
Small pelagic fish	247,937	345,538
Large pelagic fish	72,932	160,006
Reef fish	57,221	38,542
Squid (cephalopods)	66,609	72,024
Shrimp	83,820	—
Blue swimming crab (Rajungan)	23,508	—
Crab (Kepiting)	7,360	8,947
Lobster	1,481	127

Non-State Actors (NSAs) contribute to National Target 8 by supporting the sustainable use of biological resources through community-based planning, strengthening monitoring and compliance mechanisms, and promoting customary and local resource management systems. Their contributions include facilitation of land-use and conservation agreements at the village level, support for patrol and oversight mechanisms

in terrestrial and marine areas, and promotion of sustainable fisheries and non-timber forest product utilization. NSAs also support biodiversity-based livelihood development and local enterprise initiatives, thereby reinforcing sustainable use practices while maintaining ecological integrity.

Stakeholders contributing to this target include the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Environment (KLH/BPLH), the Ministry of Agriculture (Kementan), the Ministry of Finance (Kemenkeu), the Ministry of Law (Kemenkum), the Ministry of Trade (Kemendag), the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (KemenATR/BPN), the Ministry of Tourism (Kemenpar), the Ministry of Industry (Kemenperin), the National Research and Innovation Agency (BRIN), Statistics Indonesia (BPS), the Ministry of Health (Kemenkes), the Ministry of Home Affairs (Kemendagri), the Ministry of Energy and Mineral Resources (Kemen ESDM), the National Food Agency (Bapanas), Indonesian National Police (POLRI), the Indonesian National Armed Forces (TNI), the Attorney General's Office of the Republic of Indonesia (Kejaksaan RI), the Supreme Court (Mahkamah Agung), the Indonesian Maritime Security Agency (Bakamla), Indonesian Food and Drug Authority (BPOM), Local Governments (Province, City/Regency), and non-state actors such as Badan Registrasi Wilayah Adat, Burung Indonesia, Fauna & Flora Indonesia, Konservasi Indonesia, UNDP Indonesia, Wildlife Conservation Society - Indonesia Program, Working Group ICCAs Indonesia, Yayasan Kehati, and Yayasan Sahabat Bekantan Indonesia.

Main Outcomes Achieved

Headline Indicator 9.1 – Benefit from the sustainable use of wild species; and

National Indicator 8.c – Economic value derived from the sustainable use of species

The benefits derived from the use of wild species, both terrestrial and marine, can be assessed through two indicators: Non-Tax State Revenue (*Penerimaan Negara Bukan Pajak/PNBP*) and export value. PNBP reflects the fees and levies collected by the Government, whereas export value represents the actual economic value obtained by market actors. The volume established for each commodity is determined through a quota-based assessment process involving relevant stakeholders. For wildlife commodities, PNBP tends to remain relatively stable between 0.025-0.031 trillion rupiah (≈ USD 1.6-2.0 million) annually during the 2018-2024 period, as issued quotas are strictly managed to avoid significant deviations from allocations set in previous years (to ensure sustainable use of wild species). In contrast, PNBP from marine commodities was substantially higher and slightly fluctuated from 20.50 to 30.89 trillion rupiah (≈ USD 1.2–1.8 billion) between 2018 and 2024, depending on the Maximum Sustainable Yield (MSY) of selected marine commodities.

Revenue from exports for wildlife species ranged from 8.55 to 11.79 trillion rupiah (2020-2024), approximately USD 0.51–0.70 billion, while export revenue from marine biota was higher with some fluctuation, from 75.33 trillion rupiah in 2018 to 92.28 trillion rupiah in 2024 (≈ USD 4.5–5.5 billion).

Headline Indicator 9.2 – Percentage of the population in traditional occupation

Data on the percentage of the population engaged in traditional occupations are not yet available, as national population censuses in Indonesia do not disaggregate data specifically for customary and local communities. Instead, respondents are classified under general occupational categories such as farmers, fishers, civil servants, or private-sector employees, without identifying whether these livelihoods are practiced within customary systems.

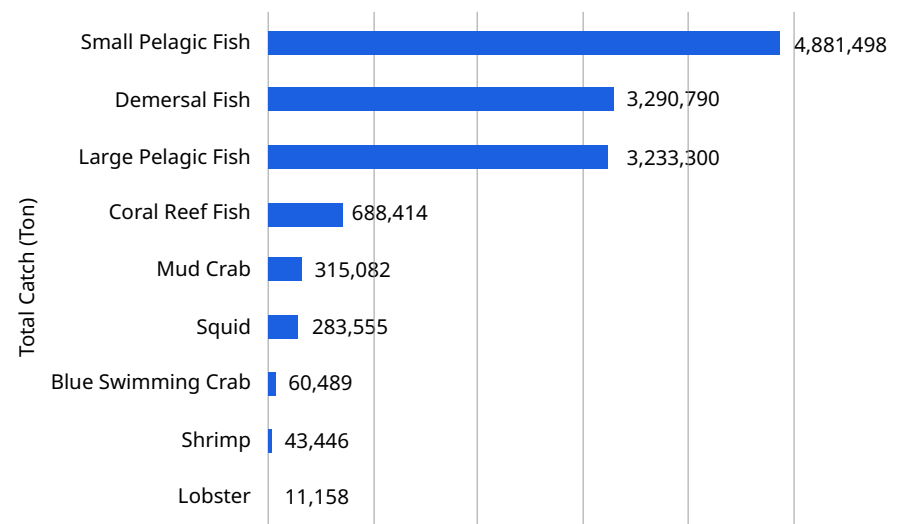


Figure 8.1. Total Allowable Catch (TAC) (tons)

Headline Indicator 5.1 – Proportion of fish stocks within biologically sustainable levels; and

National Indicator 8.a – Proportion of fish stocks harvested within biologically sustainable limits

For the utilization of marine fisheries resources, Indonesia applies a quota-setting mechanism based on the assessment of biologically safe limits, as determined and formally stipulated in [Ministerial Decree of the Minister of Marine Affairs and Fisheries No. 19/2022](#). Marine capture fisheries quotas are established by resource category—namely demersal fish, coral reef fish, large pelagic fish, and small pelagic fish, as well as squid, shrimp, lobster, blue swimming crab, and mud crab—and are set for five-year management periods (Figure 8.1).

National Indicator 8.b – Average percentage of harvest quota utilization for wild species and aquatic biota

The utilization of wild and aquatic species in Indonesia is regulated through an annual quota-setting mechanism that takes into account the level of quota uptake in the previous year. Accordingly, for wildlife species, utilization rates are expected to consistently approach 100%, as the quotas established are deliberately set below market demand, thereby encouraging full quota utilization each year.

National Indicator 8.d - Number of customary and local communities utilizing species based on traditional knowledge

Based on data from *Badan Registrasi Wilayah Adat (BRWA)*, a total of 1,320 customary communities were registered nationally as the Baseline 2020 IBSAP. These communities rely on species utilization grounded in traditional knowledge systems that have been developed and transmitted across generations. The use of wild and cultivated species for food, medicine, construction materials, cultural practices, and livelihood purposes is generally governed by customary norms, taboos, seasonal calendars, and locally defined management rules that regulate harvesting levels and protect critical habitats, thereby supporting the sustainable use and conservation of biodiversity.

National Indicator 8.e – Reduction in food waste generation relative to the baseline

Data on waste management performance are derived from activities on waste reduction and handling of household and household-like waste conducted by local governments. These data are reported by 245 regencies/cities and can be monitored through the National Waste Management Information System (*Sistem Informasi Pengelolaan Sampah Nasional/SIPSN*) managed by the Ministry of Environment.

To date, Indonesia categorizes waste composition into nine types, including food waste, wood/twigs, paper/cardboard, plastic, metal, fabric, rubber/leather, glass, and others, based on reports submitted by local governments. However, specific calculations on food waste reduction by category have not yet been systematically conducted at the national level. As a result, available data reflecting governance efforts to reduce food waste are presented in aggregate form, expressed as the percentage of total waste reduction and handling relative to total annual waste generation. This figure is calculated by adding the annual waste reduction and annual waste handling (tons/year) and dividing the result by the total annual waste generation (tons/year). It should be noted that cumulative annual waste generation figures remain influenced by the consistency and completeness of reporting from regencies/cities, which are still uneven across regions.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Several key challenges remain in the achievement of National Biodiversity Target 8, Ensuring the Sustainable Use of Biological Resources for Community Well-Being:

Illegal trade of protected and commercial species, including the online wildlife trade, remains a significant issue. Monitoring mechanisms, such as online transaction monitoring across various social media and e-commerce platforms, need to be continuously enhanced to combat this problem effectively. Adoption of production through breeding facilities remains a challenge due to the vast number of commercial species commodities and the fluctuation in the market demand. Exports of wildlife-based commodities remain focused on raw materials, with limited development of mid- or end-value products.

Limited capacity for monitoring and law enforcement at both central and local levels remains a major challenge. This is primarily due to insufficient resources, human capacity, and the vast size of areas that require monitoring, as well as the growing diversity of illegal resource exploitation activities.

Data gaps in scientific research and species population assessments hinder the establishment of stronger science-based quotas. The large number of species being utilized, the extensive distribution areas, and the diverse nature of their habitats make it difficult to accurately determine sustainable harvest levels. The use of modern technologies, such as camera traps and environmental DNA (eDNA), holds promise for improving the quality of scientific data. However, these technologies require significant infrastructure, human resources, and funding to cover the extensive areas of Indonesia's biodiversity-rich regions.

Limited access to green economic alternatives for local communities contributes to their dependence on non-sustainable resource utilization. Enhancing access to sustainable livelihoods is critical to reducing pressures on natural resources. Suboptimal inter-sectoral and inter-agency coordination, particularly in aligning conservation policies with trade regulations, is a continuing challenge. There is a need for better policy synchronization between different stakeholders involved in conservation and sustainable use.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

CITES Regulation Implementation in Indonesia

Every proposal for the utilization of wild flora and fauna (*Tumbuhan dan Satwa Liar/TSL*) and marine biota, undergoes a thorough scientific evaluation process, which includes desktop studies and field surveys to ensure that the proposed utilization does not threaten the survival of the species involved. This process involves a comprehensive review by the Scientific Authority (SA), which is responsible for conducting risk assessments for each application based on available scientific data, in collaboration with the Management Authority and Non-State Actors (NSAs).

Through this mechanism, Indonesia has successfully implemented sustainable management principles in accordance with CITES regulations and continues to work towards improving monitoring and reporting systems. Moreover, the consistent oversight by relevant authorities, both at the central and local levels, further strengthens Indonesia's commitment to ensuring the sustainable utilization of wildlife biodiversity.

The Ngata Toro Customary Community

The Ngata Toro Customary Community of Central Sulawesi Province possess a distinct practice of local wisdom known as Ombo Rotan. Given the high economic value of rattan, diverse species proliferate within their customary areas, each possessing distinct utility for various handicraft requirements and daily subsistence. Through Ombo Rotan, the community consciously regulates the timing, methods, and intensity of rattan extraction to prevent degradation. This consciousness stems from the understanding that over-exploitation would degrade the forest and disrupt the ecological equilibrium that sustains their livelihoods. The practice of Ombo Rotan employed by the Ngata Toro serves as a mechanism of "traditional moratorium," parallel to the principles of modern adaptive management. Through the principle of rotational harvesting (Ra Ombo), the community permits the extraction of rattan only upon reaching a specific maturity (typically >3 years) and restricts collection in riparian zones during the grain-filling stage of rice cultivation to maintain agro-ecological balance. This evidences an "ecological reflexivity" capable of balancing subsistence economic imperatives with the functional sustainability of the forest as a provider of Non-Timber Forest Products (NTFPs), such as honey, damar resin, nOMPI, tobe (a raw material for perfume), and agarwood (gaharu). In other words, Ombo Rotan constitutes a form of "customary sustainable use" that is intrinsically linked to, and significantly impacts, community life.

Dayak Simpakng Customary Law Community

The Dayak Simpakng Customary Law Community (*Masyarakat Hukum Adat*) in Mekar Raya Village practices the tembawang system, a forest model characterized by a high diversity of local fruit species and varieties, particularly durian. Diverse durian varieties planted by ancestors are regarded as sacred, protected under customary law, and are strictly prohibited from being felled. Some fruit trees within the tembawang are centuries old and serve as markers of ancient settlements (*kampung tua*); consequently, the durian possesses an intrinsic link to the community's history and identity.

The prohibition against felling primary fruit trees contributes to the formation of an intact forest structure and ensures the preservation of forest cover. Technically, tembawang maintains a complex forest structure wherein ancient trees function as a canopy for a diverse understory, which is utilized for wild food sources and medicinal plants. This conservation of genetic resources supports dietary diversification for the community, enabling the consumption of at least five distinct fruit types daily, facilitated by staggered fruiting cycles throughout the year. This practice aligns with global efforts to halt species extinction and preserve the adaptive potential of local varieties in the face of climate change.

Women's Leadership in Forest Conservation to Protect Sustainable Use in Lore Lindu, Central Sulawesi

In the buffer zones and surrounding areas of Lore Lindu National Park in Central Sulawesi, customary communities have demonstrated a strong model of community-based biodiversity conservation rooted in customary law (*adat*) and women's leadership. The Toro Customary Community, in particular, maintains a traditional governance system guided by the principles of *hintuwu* (social harmony) and *katuvua* (ecological balance), which regulate relationships among people and between humans and nature. These values are operationalized through a clearly defined customary land-use system that designates conservation zones, primary forests, water catchments, rotational agriculture areas, and restoration zones, ensuring sustainable resource management and ecological stability.

A distinctive feature of this governance system is the role of *Tina Ngata* (Mother of the Village), a traditional female leader whose presence is mandatory in customary decision-making processes. The Tina Ngata safeguards ecological knowledge, oversees compliance with land-use rules, resolves social conflicts, and guides agricultural cycles based on traditional ecological indicators. Following a cultural revitalization movement in the 1990s, the role of women in conservation was restored and strengthened, including the establishment of the Customary Women's Organization of Toro (OPANT). In 2023, after decades of advocacy, the Toro community obtained formal state recognition of their customary forest, demonstrating successful harmonization between customary governance and national conservation policy.

The model extends beyond Toro to neighboring villages in Kulawi, where youth initiatives such as the "*Rumah Belajar Kulawi*" (Kulawi Learning House) are revitalizing local ecological knowledge among younger generations. Community-based forest management institutions collaborate with the national park authority in joint patrols, participatory zoning, and enforcement of customary sanctions. Women also contribute to sustainable local economies through forest-based handicrafts, non-timber forest products, and bark-cloth production, applying the principle of "take and restore" to ensure ecological regeneration.

This case demonstrates how women's leadership, intergenerational knowledge transfer, and constructive engagement with state institutions can work together to strengthen biodiversity conservation. The harmonization between customary law and national law has enabled equitable access, sustainable use, and ecosystem protection within and around protected areas. The Lore Lindu experience illustrates a replicable model of inclusive, community-driven conservation aligned with the objectives of the KMGBF.

Indicator Data

Headline Indicator 5.1 Proportion of fish stocks within biologically sustainable levels; and

National Indicator 8.a. Proportion of fish stocks harvested within biologically sustainable limits

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
5.1 Proportion of fish stocks within biologically sustainable levels	Type of Commodity	Demersal Fish	2022	Ton	3,290,790	
		Coral Reef Fish	2022	Ton	688,414	
		Large Pelagic Fish	2022	Ton	3,233,300	
		Small Pelagic Fish	2022	Ton	4,881,498	

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
		Squid	2022	Ton	283,555	
		Shrimp	2022	Ton	43,446	
		Lobster	2022	Ton	11,158	
		Blue Swimming Crab	2022	Ton	60,489	
		Mud Crab	2022	Ton	315,082	

Headline Indicator 9.1 Benefits from the sustainable use of wild species; and

National Indicator 8.c. Economic value derived from the sustainable use of species

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
9.1 Benefits from the sustainable use of wild species	Wildlife Species	Non-tax State Revenue	2024	IDR Trillion	0.028	
		Non-tax State Revenue	2023	IDR Trillion	0.028	
		Non-tax State Revenue	2022	IDR Trillion	0.028	
		Non-tax State Revenue	2021	IDR Trillion	0.031	
		Non-tax State Revenue	2020	IDR Trillion	0.025	
	Marine Biota	Non-tax State Revenue	2024	IDR Trillion	25.96	
		Non-tax State Revenue	2023	IDR Trillion	27.59	
		Non-tax State Revenue	2022	IDR Trillion	27.37	
		Non-tax State Revenue	2021	IDR Trillion	30.89	
		Non-tax State Revenue	2020	IDR Trillion	24.54	
	Wildlife Species	Non-tax State Revenue	2019	IDR Trillion	22.89	
		Non-tax State Revenue	2018	IDR Trillion	20.50	
		Export Value	2024	IDR Trillion	8.55	
		Export Value	2023	IDR Trillion	9.90	
		Export Value	2022	IDR Trillion	10.88	
		Export Value	2021	IDR Trillion	11.79	

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
		Export Value	2020	IDR Trillion	10.79	
	Marine Biota	Export Value	2024	IDR Trillion	92.28	
		Export Value	2023	IDR Trillion	87.28	
		Export Value	2022	IDR Trillion	96.75	
		Export Value	2021	IDR Trillion	88.64	
		Export Value	2020	IDR Trillion	80.68	
		Export Value	2019	IDR Trillion	76.51	
		Export Value	2018	IDR Trillion	75.33	

Headline Indicator 9.2 Percentage of the population in traditional occupations

No data available

Data are not yet available, as population censuses in Indonesia do not disaggregate data specifically for customary and local communities, but instead classify respondents based on general occupational categories (e.g., farmers, fishers, civil servants, and private-sector employees).

Binary Indicator 5.b Number of countries with legal instruments or other policy frameworks regulating trade in wild species

5.1 Does your country have legal instruments or other policy frameworks to regulate trade in wild species? (Select all that apply)

- For terrestrial species
- For freshwater species
- For marine species
- For international trade

Binary Indicator 9.b Number of countries with policies to manage the sustainable use of wild species, providing social, economic, and environmental benefits for people, and to protect and encourage the customary sustainable use of biodiversity by Indigenous Peoples and Local Communities

9.1 Does your country have legal instruments, policy frameworks, or administrative measures to ensure the sustainable management and use of wild species?

Fully

9.2 Does your country monitor the sustainable management and use of wild species?

Fully

9.3 Does your country monitor the social, economic, and environmental benefits derived from the use of wild species for people, particularly those in vulnerable situations and those most dependent on biodiversity?

Partially

9.3.1 If the response is “fully” or “partially”, disaggregate by all relevant groups of people, as determined at the national level:

- Women and girls
- Children and youth
- Persons with disabilities
- Indigenous Peoples and Local Communities

9.4 Does your country have legal instruments or other policy frameworks to protect and encourage the customary sustainable use of biodiversity by Indigenous Peoples and Local Communities, such as through a plan of action on customary sustainable use of biological diversity or other relevant initiatives?

Partially

Comments

The level of disaggregation requested is considered highly specific. In Indonesia, all regulations related to participation in biodiversity management are designed to apply inclusively to all citizens and do not introduce segregation among Indigenous Peoples and Local Communities (referred to in Indonesia as Customary and Local Communities), women and girls, children and youth, or persons with disabilities. In the context of Customary and Local Communities, Indonesia has established regulations and policies that guarantee rights and protection, including protection for environmental defenders.

Binary Indicator 16.b Number of countries developing, adopting, or implementing policy instruments aimed at encouraging and enabling people to make sustainable consumption choices

16.1 Has your country established mechanisms, policies, legislative measures, or regulatory frameworks aimed at supporting sustainable consumption?

Partially

16.2 Has your country adopted mechanisms to improve awareness or education regarding the impacts of consumption on biodiversity, including providing access to relevant and accurate information or alternatives that support sustainable consumption?

Partially

16.3 Has your country adopted or implemented policy instruments aimed at encouraging and enabling people to make sustainable consumption choices, including efforts to reduce food waste, overconsumption, and waste generation?

Partially

National Indicator 8.b. Average percentage of harvest quota utilization for wild species and aquatic biota

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
8.b. Average percentage of harvest quota utilization for wild species and aquatic biota	Quota utilization	Wildlife Species	2025	Percent	100	
		Wildlife Species	2024	Percent	100	
		Wildlife Species	2023	Percent	100	
		Wildlife Species	2022	Percent	100	
		Wildlife Species	2021	Percent	100	
		Wildlife Species	2020	Percent	100	
	Quota utilization	Marine Biota	2025	Percent	100	
		Percent	2024	Percent	100	
		Percent	2023	Percent	100	
		Percent	2022	Percent	100	
		Percent	2021	Percent	100	
		Percent	2020	Percent	100	

National Indicator 8.d. Number of customary and local communities utilizing species based on traditional knowledge

Use national data set

Indicator	Year	Unit	Value	Footnote
8.d. Number of customary and local communities utilizing species based on traditional knowledge	2025	Customary Community	1320	

National Indicator 8.e. Reduction in food waste generation relative to the baseline

- No data available
- To date, Indonesia has categorized waste composition based on waste types (nine categories: food waste, wood/twigs, paper/cardboard, plastic, metal, fabric, rubber/leather, glass, and others), collected from reports submitted by various regencies/cities. However, waste management calculations by category have not yet been conducted.

The available data reflecting governance in reducing food waste generation are still presented in the form of total calculations as a percentage of overall waste handling. This figure is obtained by adding the annual waste reduction (tons/year) and annual waste handling (tons/year), then dividing the result by the total annual waste generation (tons/year).

The cumulative annual waste generation value is still influenced by the consistency of reporting from regencies/cities, which remains inconsistent.

<https://portal-sipsn.kemenvh.go.id/data/komposisi-sampah>

National Biodiversity Target 9

Sustainable Silviculture, Agriculture and Aquaculture Practices



Main actions taken to implement the target

Implementation of National Biodiversity Target 9 focuses on Sustainable Silviculture, Agriculture and Aquaculture Practices. Under the IBSAP 2025–2045, these efforts are organized into five action groups, as follows:

- 9.1 Implementation of sustainable practices in forestry;
- 9.2 Implementation of sustainable practices in food crops, horticulture, and plantations;
- 9.3 Implementation of sustainable practices in aquaculture;
- 9.4 Measure to minimize of the environmental and biodiversity impacts arising from the utilization of biodiversity and/or development activities; and
- 9.5 Development of sustainability standards in silviculture, agriculture and aquaculture practices.

Summary of progress towards the target, including the main outcomes achieved

Sustainable use of biological resources is a concept that meets human needs without compromising ecological integrity. In the forestry sector, one example of sustainable forest utilization is the green labeling of legally harvested wood through the Verification under the Indonesian Timber Legality Assurance System (*Sistem Verifikasi Legalitas Kayu/SVLK*). Under this scheme, timber products receive legality certification after undergoing a process of evaluation, reaching 3,874 companies as of December 2025, ensuring that products come from sources whose origins and management comply with legal and sustainability standards. In addition to SVLK, sustainable forest management is exemplified by the Sustainable Forest Management (*Pengelolaan Hutan Lestari/PHL*) scheme, which is reported through the Forest Resource Management Information System (*Sistem Informasi Penatausahaan Hasil Hutan/SIPUHH*). The implementation of PHL is strengthened by the establishment of Forest Management Units as local-level PHL units. Currently, the total area under sustainable forest management, as per the Business Permit for Forest Utilisation in Plantation Forest (*Perizinan Berusaha Pemanfaatan Hutan-Hutan Tanaman/PBPH-HT*), is 10,680,449.98 ha, and the area under natural forest (*Perizinan Berusaha Pemanfaatan Hutan-Hutan Alam/PBPH-HA*), is 4,300 ha. Since 2011, new permits for the utilization of natural forests have no longer been issued.

In the agriculture sector, several sustainable farming models have been developed to preserve biodiversity, including organic farming systems, integrated farming, integrated pest management (IPM), and Low External Input Sustainable Agriculture (LEISA). Another model of sustainable agriculture is Smart Agriculture or Smart Farming, which uses technology-driven innovations to enhance efficiency, productivity, and the sustainability of agricultural practices. In the plantation subsector, sustainable practices are also widely implemented, especially in oil palm plantations. Under the Indonesia Sustainable Palm Oil (ISPO) standard, palm oil companies are mandated to conduct comprehensive assessments starting from the planning phase of land clearing, with a focus on balancing economic, social, and ecological aspects. As of October 2025, 1,169 enterprises have been certified under the ISPO standard, covering 6,716,141.57 ha (Data Directorate General of Estate Crops, Ministry of Agriculture). According to Agricultural Statistics (2024), Indonesia's agricultural land covered 36,817,086 ha in 2019. This includes areas used for irrigated and non-irrigated paddy fields (7,463,948 ha), plantations (12,393,092 ha), fields (5,188,658 ha), and unutilized land (11,771,388 ha).

In the fisheries sector, aquaculture has become a significant contributor to Indonesia's economy. The country has 17.91 million ha of potential aquaculture areas, including freshwater, brackish, and marine aquaculture zones. By 2023, 12,920 enterprises had achieved Good Aquaculture Practices (*Cara Budidaya Ikan yang Baik/CBIB*) certification, while 105 enterprises have obtained certification for Good Feed Manufacturing Practices (*Cara Produksi Pangan Ikan yang Baik/CPPIB*).

In terms of the development of sustainable management standards in forestry, agriculture, plantations, aquaculture, and fisheries, Indonesia has created 249 environmental and forestry-related standards, 147 agricultural standards, and 131 fisheries standards developed by the [National Standardization Agency \(Badan Standardisasi Nasional/BSN\)](#). National standards are typically developed as voluntary market references. However, when related to national security, safety, public health, or the preservation of environmental functions, the government enforces standards as mandatory. As of 2025, [322 mandatory standards](#) have been implemented, including those for [organic food systems \(SNI Organic Food System\)](#), solid organic fertilizers (SNI Organic Fertilizer), and zeolite quality standards for agricultural soil amendments.

Organic farming is a holistic production management system designed to enhance and sustain agroecosystem health, including biodiversity, biological cycles, and soil biological activity. It prioritizes the use of farm-derived waste as inputs and emphasizes adaptation to local ecological conditions. In Indonesia, organic food system standards are mandatory under SNI 6729:2016. As of 2024, a total of 41,397 farmers have implemented organic farming practices, covering 65,348 ha (Statistics of Indonesian Association of Organic Farming, 2024). The number of villages implementing organic farming has reached 1,384, with 207 agricultural enterprises registered under the organic farming system.

In the livestock sector, Indonesia has established 21 livestock breeding stock areas to maintain the sustainability of animal protein sources and protect local genetic diversity. This initiative ensures that the livestock production system remains legal and sustainable, reducing pressure on wild species and supporting national food security. The Livestock Seed and Breed Conformity Assessment Body (*LS-Pro Benih dan Bibit Ternak*) has distributed 52 million doses of frozen semen from dairy and beef cattle, 6,067 cattle embryos, and 4,430 livestock breeding stock based on SNI Seed and Breeding Standards (67 standards for seeds and breeding) (Data Conformity Assessment Body for Livestock, Directorate General of Livestock and Animal Health Service, Ministry of Agriculture). Furthermore, 17 best practice guidelines for livestock breeding across commodities have been developed, with a key focus on environmentally friendly livestock management, including waste management practices (Data Directorate General of Livestock and Animal Health Service, Ministry of Agriculture).

Reproductive technologies such as artificial insemination (AI) and embryo superovulation are being applied as efforts to improve genetic quality and livestock production. There are 20 Artificial Insemination Centers, one livestock embryo center, and seven breeding centers across the country, serving as Genetic Conservation Banks. Genetic conservation efforts have been made for 120 livestock breeds from 2010-2025 ([Data Ministry of Agriculture, 2025](#)), which have been registered with the Domestic Animal Diversity Information System (DAD-IS) of the FAO. Additionally, 21 livestock breeding regions have been designated, and 367 plant varieties are protected, with 256 plant varieties officially registered ([Data Ministry of Agriculture, 2025](#)).

In terms of climate change adaptation and mitigation in the agricultural sector, efforts are underway to develop climate-resilient crop varieties. These include low-emission paddy varieties such as Inpari 17 and Inpari 18, which have a low methane emission index (0.01 kg CH4 per kg of rice), and drought-adapted paddy varieties such as Inpago (16 varieties) ([Data Ministry of Agriculture, 2025](#)). Furthermore, agricultural insurance is facilitated for crops (including food, horticulture, and plantation crops) and livestock (ruminants, non-ruminants, monogastric animals, and pseudoruminants) to safeguard against crop failure. To support farmers, a climate change early warning system ([Si-PERDITAN](#)) has been established to handle the impacts of climate change. In terms of farmer protection, 3,748,753 farmers have been provided with rice crop insurance (covering 2,337,651.23 ha), while 119,529 livestock farmers have enrolled in livestock insurance programs for cattle/buffalo (covering 307,437 animals).

Non-State Actors (NSAs) contribute to National Target 9 by promoting the sustainable management and utilization of biodiversity within food production systems. Their contributions include the development of diversified and community-based food production models such as food forest initiatives and community food and medicinal gardens, the promotion of local food crops including sorghum, and the strengthening

of organic agriculture practices. NSAs also support sustainable commodity production through improved governance in coffee and palm oil sectors, organic certification of high-value crops, diversification of village-based enterprises utilizing non-timber forest products, and the implementation of sustainable aquaculture practices. In addition, strategic partnerships and integrated risk management approaches have been implemented to enhance the sustainability and resilience of agriculture, fisheries, and plantation systems.

Stakeholders contributing to the achievement of this target are the Ministry of Forestry (Kemenhut), the Ministry of Environment (KLH/BPLH), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kemendes PDT), the National Standardization Agency of Indonesia (BSN), and non-state actors such as Gabungan Pengusaha Kelapa Sawit Indonesia, Resiliensi Bulan Hijau, Yayasan Kehati, Konservasi Indonesia, Yayasan Lahan Basah, UNDP Indonesia, Yayasan Borneo Nature Indonesia, and Fauna & Flora Indonesia.

Main Outcomes Achieved

Headline Indicator B.1 – Services Provided by Ecosystems

Headline Indicator B.1 applies the System of Environmental-Economic Accounting (SEEA) which is currently under development by the National Statistical Agency (BPS) in collaboration with the United Nations Statistical Division (UNSD). The associated technical guidelines and methodologies are expected to be operationalized starting in 2026.

In the interim, Indonesia reports measurable progress in several key production sectors, including forestry, agriculture, fisheries, and aquaculture. Outcomes achieved to date include the application of sustainability standards and certification schemes, the expansion of sustainable forest management units, and the integration of biodiversity considerations into sectoral policies. Challenges remain in ensuring consistent implementation across regions and production systems, particularly among smallholders. To address this, Indonesia applies a combination of regulatory instruments, capacity-building programs, and incentive-based approaches to progressively mainstream sustainable use practices.

Ecosystem services are expected to become a cornerstone of national forestry development, given their substantially greater potential compared to non-timber forest products. Environmental service groups within the forestry sector include nature-based tourism services, hydrological services, carbon management services, geothermal services, and biodiversity-related ecosystem services. Non-Tax State Revenue (*Penerimaan Negara Bukan Pajak/PNBP*) from ecosystem services has increased markedly, rising from IDR 53.81 billion in 2020 to IDR 206.1 billion in 2024.

Indonesia’s marine natural capital account estimates the total economic value of key coastal and marine ecosystems at approximately IDR 3,971 trillion (**Figure 9.1**). Coral reefs contribute the largest share (around IDR 506 trillion), followed by coastal and high seas (about IDR 1,411 trillion combined), mangroves (around IDR 2,003 trillion), and seagrass meadows (approximately IDR 50 trillion). The valuation differentiates ecosystem conditions: good, moderate, and degraded, revealing significant variation in economic value per hectare across ecological statuses. Overall, the account highlights the substantial economic importance of maintaining healthy marine ecosystems and underscores the financial risks associated with ecosystem degradation.

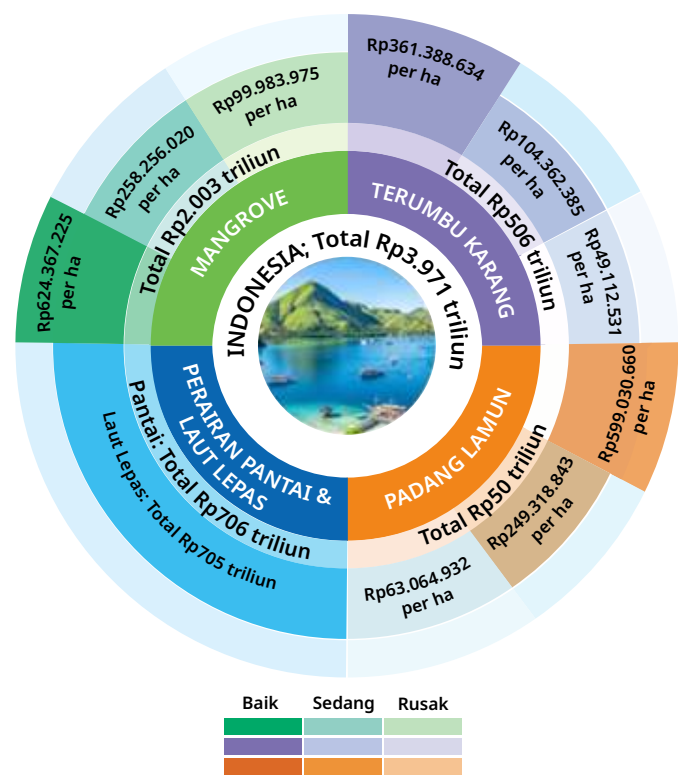


Figure 9.1. Economic value of key coastal and marine ecosystems

Headline Indicator 10.1 – Proportion of agricultural area under productive and sustainable agriculture

Indonesia continues to transition toward productive and sustainable agriculture, alongside the continued predominance of conventional production systems. Progress can be reflected through the expansion of certified and standards-based approaches, including organic farming and sustainability certification in plantation commodities. In 2024, 65,348 ha were managed under organic farming systems. In the plantation sector, as of 2025, ISPO certification had been issued to 1,276 business entities covering approximately 7.5 million ha; however, the expiry and revocation of some certificates reduced the certified area to approximately 6.7 million ha.

Headline Indicator 10.2 – Progress towards sustainable forest management

Within the forestry sector, sustainable forest management is exemplified through Sustainable Forest Management (*Pengelolaan Hutan Lestari*) and further strengthened through the establishment and implementation of Forest Management Units (FMUs). Implementation has been advanced through Forest Utilization Business Permit (PBPH), covering 10,680,449.85 ha of plantation forests and 4,300 ha of natural forests. Since 2011, new permits for the utilization of natural forests have no longer been issued. Under Indonesian Timber Legality Assurance System (*Sistem Verifikasi Legalitas Kayu/SVLK*), timber products receive legality certification after undergoing a process of evaluation, reaching 3,874 companies, ensuring that products come from sources whose origins and management comply with legal and sustainability standards.

National Indicator 9.a – Percentage of business units verified as implementing sustainable production practices in the silviculture, agriculture, and fisheries

In the aquaculture and fisheries sector, several business certification schemes have been developed in Indonesia to promote good practices and sustainability standards. During the period 2018–2023, there was a significant increase in the number of business units certified under Good Aquaculture Practices (*Cara Budidaya Ikan yang Baik/CBIB*). A positive trend is also evident for certifications related to Good Fish Hatchery Practices (*Cara Pembenihan Ikan yang Baik/CPIB*) and Good Fish Feed Manufacturing Practices (*Cara pembuatan Pakan Ikan yang Baik/CPPIB*). In 2023, certifications were further introduced for Good Fish Medicine Manufacturing Practices (*Cara Pembuatan Obat Ikan yang baik/CPOIB*) and Good Fish Medicine Distribution Practices (*Cara Distribusi Obat Ikan yang baik/CDOIB*) (Directorate General of Aquaculture, Ministry of Marine Affairs and Fisheries, 2025). The Government of Indonesia continues to strengthen capacity-building and guidance efforts to reinforce the adoption of good practices and sustainability standards at the national level (Figure 9.2).

In the plantation sector, as of 2025, ISPO certification had been issued to 1,276 business entities covering approximately 7.5 million ha; however, the expiry and revocation of some certificates reduced the certified area to approximately 6.7 million ha.

In the forestry sector, one example of sustainable forest utilization is the green labeling of legally harvested wood through the Verification under the Indonesian Timber Legality Assurance System (*Sistem Verifikasi Legalitas Kayu/SVLK*). Under this scheme, timber products receive legality certification after undergoing a process of evaluation, reaching 3,874 companies as of December 2025.

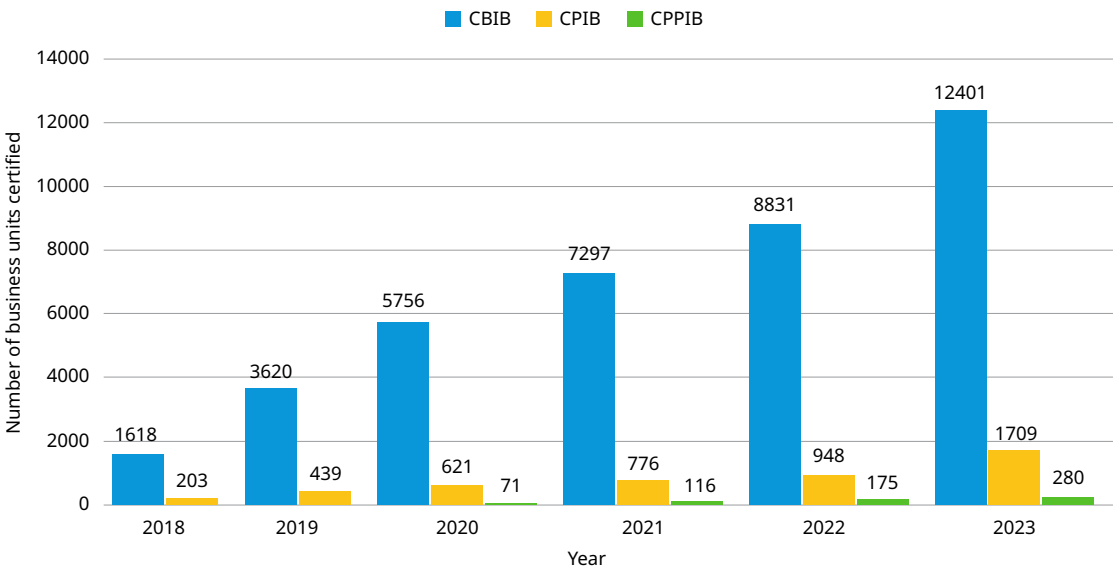


Figure 9.2. Number of certified aquaculture and fisheries business units under CBIB, CPIB, and CPPIB

 Summary of key challenges encountered and different approaches that may be taken for further implementation

- 1. Data
Monitoring the expansion of monoculture cultivation in both forestry and agriculture, which encroaches on areas not designated for such use, has become a problem in many regions.
- 2. Science and Technology
The dependency on a limited number of high-yielding agricultural varieties further reduces genetic diversity. There is also a lack of development of local varieties with the potential to serve as substitutes or complements in meeting local food-source needs.
- 3. Science and Technology
In the fisheries sector, a major challenge to sustainable aquaculture practices is the negative environmental impact of conventional production systems, including habitat degradation, water quality deterioration, and biodiversity loss.
- 4. Financial
Socioeconomic challenges related to logistics, technology, and capital further complicate the implementation of sustainable aquaculture practices.

 Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Restriction and Prohibition of Lobster Seed (*Benih Bening Lobster/BBL*) Harvesting in Indonesia

Indonesia has implemented a precautionary and conservation-oriented policy framework to regulate the harvesting and utilization of lobster seeds (*Benih Bening Lobster/BBL*) as a best practice to safeguard marine biodiversity, ensure the sustainability of lobster stocks, and support long-term fisheries management. This approach emphasizes strict control over access to biological resources, focusing on the protection of early life stages of lobster, which are highly vulnerable to overexploitation.

Under the current regulatory framework, Indonesia prohibits the export of lobster seeds and strictly limits their collection from the wild. Harvesting of BBL is only permitted under highly regulated conditions and exclusively for domestic aquaculture development, with the objective of increasing value addition within the country. This policy reflects Indonesia's commitment to preventing unsustainable exploitation of marine genetic resources and reducing incentives for illegal trade and smuggling.

The regulatory system requires that any permitted collection of lobster seeds be conducted by registered small-scale fishers, subject to quota allocation, designated fishing areas, and mandatory documentation verifying the origin and traceability of lobster seeds. These measures ensure that access to lobster biological resources is controlled, monitored, and aligned with conservation objectives rather than market-driven extraction.

In addition, Indonesia has strengthened pre-border, border, and post-border enforcement mechanisms, including fisheries monitoring and inspection, quarantine controls, and coordinated law enforcement operations. These measures have significantly improved the detection and prevention of illegal harvesting and export of lobster seeds, reinforcing compliance with national biodiversity and fisheries regulations.

This policy framework represents a best practice by shifting lobster utilization away from extractive exploitation of wild seeds toward sustainable aquaculture and stock recovery, while simultaneously protecting marine ecosystems and supporting coastal livelihoods. By prioritizing conservation at the earliest life stage of lobster, Indonesia contributes to the long-term resilience of marine ecosystems and aligns its fisheries governance with national biodiversity strategies and global sustainability commitments.

References / Legal and Policy Sources

- Law No. 31 of 2004 on Fisheries, as amended by Law No. 45 of 2009 – establishes the legal basis for sustainable fisheries management in Indonesia.
- Minister of Marine Affairs and Fisheries Regulation (Permen KP) No. 7 of 2024 on the Management of Lobster, Crab, and Blue Swimming Crab – regulates harvesting, utilization, and prohibition of lobster seed export.
- Minister of Marine Affairs and Fisheries Regulation No. 17 of 2021 and its amendments (revoked) – historical reference to the evolution of lobster seed governance.
- Director General of Capture Fisheries Decrees (2024) on the designation of lobster seed fishers and quota allocation mechanisms.
- Law No. 32 of 2014 on Marine Affairs – mandates conservation-based marine resource management.
- National Medium-Term Development Plan (RPJMN) and Fisheries Management Area (WPPNRI) Policies – integrate lobster conservation into national development planning.
- Official statements and press releases of the Ministry of Marine Affairs and Fisheries (KKP) regarding the prohibition of lobster seed export and enforcement actions.

The Crop-Bio Program and Sustainable Livestock Production

The Crop-Bio Program is a collaborative initiative between the Ministry of Agriculture and the FAO, funded by the Global Environment Facility (GEF-7). Its focus is the conservation and sustainable use of plant genetic resources in Indonesia, including both wild and local. The program is implemented in the provinces of Central Java, Central Kalimantan, and North Maluku, with main commodities such as rice, sweet potato, taro, nutmeg, and cloves.

In addition to the crop sector, GEF-8 is collaborating in the Sustainable Livestock Production to Support Resilient Food Systems, Environment, and Rural Livelihoods in Indonesia sector, located in Lampung, and involving cattle corporation villages and social forestry groups in Dompu, West Nusa Tenggara. This collaboration, established between the Ministry of Agriculture and FAO, was established over the 2024-2030 period to transform livestock production in a more climate-adaptive and sustainable manner to support resilient food systems, the environment, and rural livelihoods, especially for smallholders.

Indicator Data

Headline Indicator 10.1 Proportion of agricultural area under productive and sustainable agriculture

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
10.1 Proportion of agricultural area under productive and sustainable agriculture	Agriculture Farm	Organic Farming	2024	ha	65,348	
	Plantation	ISPO Certification	2025	Million ha	6.7	

Headline Indicator 10.2 Progress towards sustainable forest management

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
10.2 Progress towards sustainable forest management	Extent of Sustainable Forest Management (PHL)	Forest Utilization Business Permit (PBPH) in Plantation Forest	2025	ha	10,680,449.85	
	Extent of Sustainable Forest Management (PHL)	Forest Utilization Business Permit (PBPH) in Natural Forest	2025	ha	4,300	
	Timber Legality Assurance System (SVLK)	Certification Holder	2025	Holder of timber legality certificates	3,874	

National Indicator 9.a. Percentage of business units verified as implementing sustainable production practices in the silviculture, agriculture, and fisheries sectors

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
9.a. Percentage of business units verified as implementing sustainable production practices in the silviculture, agriculture, and fisheries sectors	Sector	Forestry	2025	Business entities	3,874	Holders of Timber Legality Certificates
		Plantation	2025	Business entities	1,276	ISPO Certification
		Aquaculture and Fisheries	2023	Business entities	12,401	Good Aquaculture Practices (CBIB)
		Aquaculture and Fisheries	2023	Business entities	1,709	Good Fish Hatchery Practices Certification (CPIB)
		Aquaculture and Fisheries	2023	Business entities	280	Good Fish Feed Manufacturing Practices (CPPIB)

National Biodiversity Target 10

Sustainable Use of Ecosystem Services



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Main actions taken to implement the target

Implementation of National Biodiversity Target 10 focuses on the sustainable use of ecosystem services. Under the IBSAP 2025–2045, these efforts are organized into four action groups, as follows :

- 10.1 Identification and economic valuation of ecosystem functions and services;
- 10.2 Strengthening ecosystem functions for disaster risk reduction;
- 10.3 Preparation of Conservation Areas for the implementation of carbon economic value; and
- 10.4 Development of sustainable nature-based tourism.

Summary of progress towards the target, including the main outcomes achieved

Indonesia has established a range of policies to support ecosystem assessment and the economic valuation of ecosystem services. One of the key regulatory instruments is [Presidential Regulation No. 110/2025](#) on Environmental Economic Instruments, which serves as the overarching legal framework for ecosystem services valuation.

Several additional policies further support economic valuation of ecosystem services and payment for ecosystem services (PES), including [Presidential Regulation No. 110/2025](#) on the Implementation of Carbon Economic Value (*Nilai Ekonomi Karbon/NEK*) and Greenhouse Gas Emission Control, [Statistics Indonesia Regulation No. 3/2023](#) on Guidelines for the Compilation of Natural Resource and Environmental Accounts, and [Regulation of the Minister of Environment No. 2/2025](#) on the Development of Environmental Services Payment Systems.

To further safeguard ecosystem functions and ensure their integration into decision-making, Indonesia has also developed ecosystem services maps to inform regional development planning and spatial planning, thereby supporting more sustainable land-use and resource management.

Non-State Actors (NSAs) contribute to National Target 10 by supporting the assessment, valuation, and sustainable management of ecosystem services. Their contributions include ecosystem service valuation studies, rapid ecological assessments, support for ocean accounting, and promotion of integrated risk management approaches. NSAs also facilitate community-based ecotourism and capacity-building initiatives that link ecosystem conservation with local livelihoods. These efforts strengthen the recognition of ecosystem services in planning and decision-making processes while supporting sustainable use and community benefits.

Stakeholders contributing to the achievement of this target include the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Environment (KLH/BPLH), the Ministry of Finance (Kemenkeu), the Ministry of Tourism (Kemenpar), the Ministry of Public Works (KemenPU), the National Research and Innovation Agency (BRIN), Statistics Indonesia (BPS), the Indonesian National Disaster Management Agency (BNPB), private sectors and non-state actors including Landesa Indonesia, Yayasan Kehati, Yayasan Lahan Basah, Burung Indonesia, and Fauna & Flora Indonesia.

Main Outcomes Achieved

Progress under National Biodiversity Target 10 is currently reflected through national indicator 10.a. NBT 10 is also linked to Goal B.1, which applies the System of Environmental-Economic Accounting (SEEA) methodology in its calculations.

**Headline Indicator B.1 – Services provided by ecosystems; and
National Indicator 10.a – Quantified economic value of ecosystem services utilization.**

The indicator for National Biodiversity Target 10 is still under development. In 2023, Statistics Indonesia (BPS) conducted an in-depth study on ecosystem services valuation through a preliminary study of the SEEA (In-depth Study 2023: Biodiversity and Climate Change). The Natural Resource and Environmental Accounts compiled by Statistics Indonesia currently still apply the SEEA-CF (System of Environmental-Economic Accounting-Central Framework) methodology. Indonesia plans to compile a biodiversity account starting in 2026, to align with IBSAP 2025–2045, through technical assistance from the United Nations Statistics Division (UNSD). Technical guidelines for developing GBF indicators A2 and B1 are also expected to be prepared in 2026.

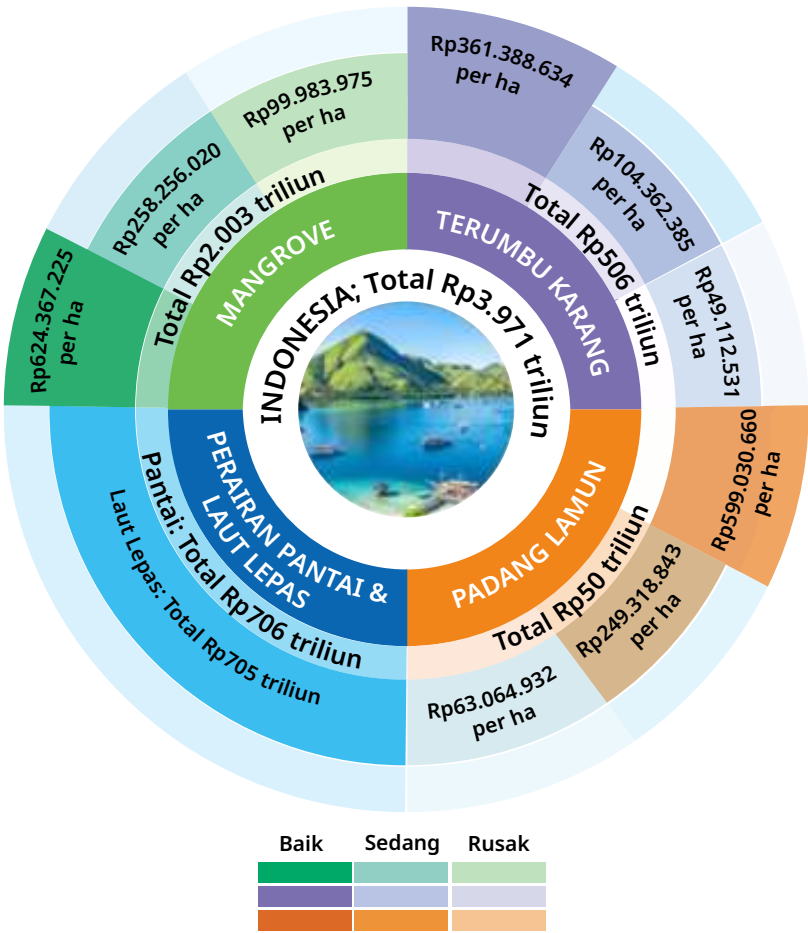


Figure 10.1. Economic Value of Environmental Services from Indonesia’s Marine Resources in 2023

Based on the [Indonesia Marine Resources Analysis 2024](#), the economic value of ecosystem services from the marine and fisheries sector in 2023 was estimated at IDR 3,970.7 trillion annually (**Figure 10.1**). This estimate covers ecosystem services provided by coral reefs, seagrass, mangrove, coastal, and open-ocean ecosystems (Ministry of Marine Affairs and Fisheries, 2024).

In terrestrial ecosystems, a comprehensive economic valuation of ecosystem service utilization has not yet been fully undertaken. Currently, available information primarily relates to non-tax state revenue (*Penerimaan Negara Bukan Pajak/PNBP*) generated from ecosystem services within conservation areas, as reflected in the following levies and fees:

Cultural services, including entrance fees for nature tourism sites, fees for nature tourism business permits, levies on revenues from nature tourism enterprises, charges for nature tourism services, fees for licenses of nature tourism service providers, fees for licenses for the provision of nature tourism facilities, and fees for licenses for the provision of nature tourism services.

Provisioning services, including fees and levies from the utilization of water resources and hydropower, levies on the provision of nature tourism facilities, charges for water utilization businesses, charges for hydropower utilization businesses, and fees for hydropower utilization business licenses.

Supporting services, including levies related to environmental risk (such as geothermal survey charges and sampling fees), as well as fines in the field of conservation of natural resources and ecosystems.

Total revenue from 2020 to 2024 reached IDR 356.1 billion, as shown in **Figure 10.2** (Ministry of Forestry, 2024).

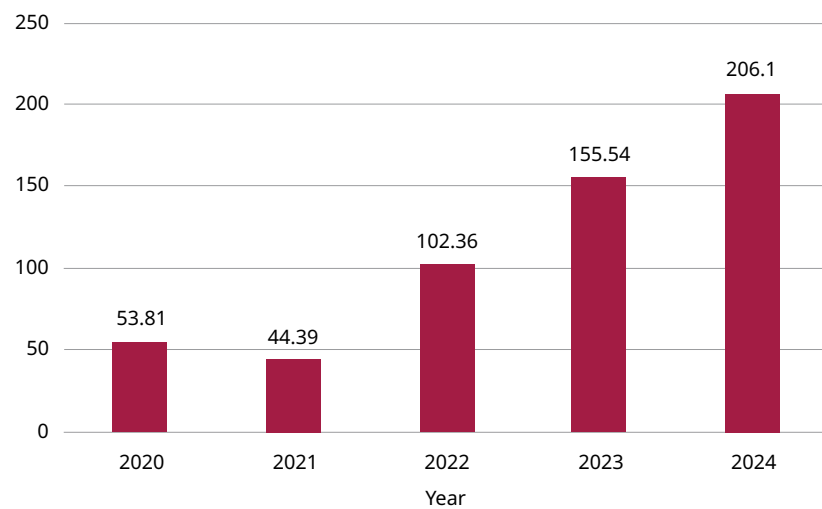


Figure 10.2. Non-Tax State Revenue of Environmental Services

Indonesia has continued efforts to protect mangrove ecosystems to strengthen their environmental functions in reducing the risks of coastal abrasion and tidal flooding. Through ongoing conservation and rehabilitation efforts during 2018–2024, improvements have been observed in both the overall extent of mangrove ecosystems and the proportion of high-density mangrove cover, which reached 92.8% of a total mangrove area of 3,440,464 ha (Ministry of Environment, 2025).

During the period 2020–2024, a total of 23 sites were identified for the implementation of economic valuation of carbon in conservation areas, covering a total area of 4,847,102.66 ha, with an estimated carbon stock of 2.48 gigatons of carbon (Gt C). This effort ensures the sustainable use of biodiversity while strengthening ecosystem contributions to nature-based solutions (Ministry of Forestry, 2025).

Indonesia has also enhanced cultural ecosystem services through improvements in facilities and infrastructure at ecotourism sites. A total of 96 marine ecotourism locations were upgraded, contributing to better visitor experiences while supporting conservation objectives (Ministry of Marine Affairs and Fisheries, 2025). These improvements, combined with strengthened ecosystem protection and management within conservation areas, have been accompanied by a steady increase in the utilization of cultural ecosystem services, as reflected in increasing visitation numbers to conservation areas between 2018 and 2024 (Ministry of Forestry, 2025).

Summary of key challenges encountered and different approaches that may be taken for further implementation

Implementation of National Biodiversity Target 10 has made measurable progress; however, several challenges remain, including the following:

- 1. Policy**
The policy framework for ecosystem services valuation remains fragmented across institutions. Several regulatory instruments require strengthening and better alignment to ensure policy coherence and to support the systematic integration of ecosystem services valuation into broader implementation processes.
- 2. Data**
The availability and consistency of ecosystem services data remain key challenges. Variations in data units, sectoral coverage, and spatial and temporal resolution constrain comparability and integration across datasets. Moving forward, Indonesia will prioritize the transition to SEEA Ecosystem Accounting, harmonize data standards across institutions, and strengthen data collection at subnational levels to improve coverage and consistency.
- 3. Infrastructure**
Technical and digital infrastructure to support integrated ecosystem services assessment and accounting remains uneven, particularly at subnational levels. Limitations in data management systems and interoperability reduce the efficiency of data sharing and reporting across sectors.
- 4. Institutional**
The multi-sectoral nature of ecosystem services valuation presents ongoing institutional coordination challenges. Responsibilities are distributed across multiple ministries and agencies, and capacity gaps persist at subnational levels in implementing ecosystem services valuation and payment for ecosystem services mechanisms. Therefore, harmonization and synchronization among institutions are required in the development of the System of Environmental-Economic Accounting (SEEA).
- 5. Science and Technology**
The application of scientific tools and technologies for ecosystem assessment and valuation remains limited in some areas. Gaps persist in the use of advanced methodologies, including spatial modeling, ecosystem services mapping, and decision-support tools.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Payment for Ecosystem Services in the Cidanau Watershed, Indonesia

The Cidanau Watershed Payment for Ecosystem Services (PES) scheme in Banten Province represents one of Indonesia’s longest-running and most well-documented PES initiatives. Implemented since the mid-2000s, the scheme was established to safeguard watershed ecosystem services, particularly water regulation by fostering cooperation between upstream land managers and downstream water users.

The PES mechanism is facilitated through the *Forum Komunikasi DAS Cidanau* (FKDC), a multi-stakeholder platform involving local government, community groups, non-governmental organizations, and the private sector. Under this arrangement, upstream farmer groups commit to maintaining forest cover and adopting soil and water conservation practices, while downstream beneficiaries, most notably PT Krakatau Tirta Industri, an industrial water user, provide financial compensation for these ecosystem services.

Payments are made through formal agreements that specify conservation obligations, monitoring arrangements, and compensation mechanisms. Studies indicate that the scheme has contributed to improved land management practices, enhanced soil infiltration, and the maintenance of watershed functions essential for a reliable water supply. The Cidanau PES also demonstrates the importance of institutional coordination, negotiated benefit-sharing, and long-term stakeholder engagement in sustaining ecosystem services.

While livelihood impacts for participating communities vary, the initiative remains a nationally recognized example of how ecosystem services valuation and PES mechanisms can be operationalized to align conservation objectives with economic incentives. The Cidanau Watershed PES provides valuable lessons for scaling up ecosystem-based approaches under National Biodiversity Target 10, contributing to the implementation of KMGBF Target 11 and Goal B.1 on ecosystem services.

References:

- CBD (2010). Payment for Ecosystem Services: Cidanau Watershed, Indonesia.
- TEEB (2013). Cidanau Watershed PES Scheme Case Study.
- WAVES Partnership / World Bank. Ecosystem Accounting and PES Applications in Indonesia.

 Indicator Data

Headline Indicator B.1 Services provided by ecosystems; and
National Indicator 10.a. Quantified economic value of environmental services utilization

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
B.1 Services provided by ecosystems	Sector	Non-State Revenue data (PNBP) for ecosystem services in the forestry sector	2024	IDR Billion	206.1	
		Non-State Revenue data (PNBP) for ecosystem services in the forestry sector	2023	IDR Billion	155.54	
		Non-State Revenue data (PNBP) for ecosystem services in the forestry sector	2022	IDR Billion	102.36	
		Non-State Revenue data (PNBP) for ecosystem services in the forestry sector	2021	IDR Billion	44.39	
		Non-State Revenue data (PNBP) for ecosystem services in the forestry sector	2020	IDR Billion	53.81	
	Sector	Total economic value of key coastal and marine ecosystems	2023	IDR Trillion	3.971	Including coral reefs, coastal and high seas, mangroves, and seagrass meadows

Headline Indicator B.1 applies the System of Environmental-Economic Accounting (SEEA), which is currently under development by Statistics Indonesia (BPS) in collaboration with the United Nations Statistics Division (UNSD). The associated technical guidelines and methodologies are expected to be operationalized starting in 2026.

In the Seventh National Report, Indonesia reports progress in ecosystem services within the forestry sector, including nature-based tourism services, hydrological services, carbon management services, geothermal services, and biodiversity-related ecosystem services. Non-Tax State Revenue (Penerimaan Negara Bukan Pajak/PNBP) from ecosystem services has increased markedly, rising from IDR 53.81 billion in 2020 to IDR 206.1 billion in 2024.

Binary Indicator B.b Number of countries with policies or actions in place to implement and monitor the sustainable use of biodiversity and the maintenance and enhancement of nature’s contributions to people, including ecosystem functions and services

B.1 Does your country have policies and/or action plans aimed at ensuring the maintenance, enhancement, and restoration of nature’s contributions to people, including ecosystem functions and services?

Fully

B.2 Does your country have policies and/or action plans aimed at ensuring the sustainable use of biodiversity?

Fully

B.3 Does your country monitor the sustainable use of biodiversity?

Partially

B.4 Does your country monitor the maintenance, restoration, and enhancement of nature’s contributions to people, including ecosystem functions and services for the benefit of present and future generations?

Partially

Comments

Headline Indicator B.b is a binary indicator that identifies whether a country has policies or actions in place to monitor the sustainable use of biodiversity and the maintenance and enhancement of nature’s contributions to people, including ecosystem functions and services. Indonesia has established the necessary policies and action plans to support the sustainable use of biodiversity. These include measures that emphasize the conservation of coastal and terrestrial ecosystems (including inland waters), the protection of genetic resources for crops and livestock, and the application of ecosystem-based approaches in land-use and marine spatial planning.

Key challenges remain, particularly the absence of a fully developed and integrated monitoring system and the limited use of monitoring results in decision-making processes. To address these challenges, Indonesia is prioritizing the transition to the System of Environmental-Economic Accounting (SEEA), while harmonizing methodologies, developing standardized indicators, and strengthening biodiversity data collection at both national and subnational levels.

National Biodiversity Target 11

Increasing the extent of Green and Blue Public Open Spaces in Urban Areas



KMGBF GOAL A

Protect and Restore



KMGBF Target 12



Sustainable Development Goals



Main actions taken to implement the target

Implementation of National Biodiversity Target 11 focuses on increasing the extent of green and blue public open spaces in urban areas. Under the IBSAP 2025–2045, these efforts are organized into two action groups, as follows:

- 11.1 Green and Blue Open Space Monitoring; and
- 11.2 Planning and development of Green and Blue Open Space with broad possible access for people in the urban areas.



Summary of progress towards the target, including the main outcomes achieved

The Government of Indonesia, through various ministries, agencies, and local governments, has implemented a range of cross-sectoral strategic programs and policies to expand, improve the quality of and ensure the sustainability of green and blue open spaces in urban areas and their surroundings. These efforts constitute a follow-up to the mandate of [Law No. 26/2007](#) on Spatial Planning and [Minister of Public Works Regulation No. 05/2008](#), which require the provision of a minimum of 30% of green open space relative to the total urban area, consisting of public and private green open space.

This mandate is further regulated under [the Ministry of Agrarian Affairs and Spatial Planning / National Land Agency Regulation No. 14/2022](#), which governs the provision and utilization of green open space. The implementation of this provision takes into account ecological function, water infiltration, economic aspects, socio-cultural values, aesthetics, and disaster risk reduction. This regulation explicitly introduces blue space as part of the spatial planning framework related to green open spaces. Blue space is defined as open space dominated by water elements, which may include rivers, lakes, reservoirs, and other water bodies.

The integration of various regulations demonstrates Indonesia's commitment to positioning green open spaces as a key instrument for ecosystem restoration, enhancing environmental resilience, and biodiversity conservation. A range of programs have been implemented by the central and local governments to support the development of green and blue infrastructure, including:

- a. The Land Cover Quality Index (*Indeks Kualitas Tutupan Lahan/IKTL*) and the Eco-riparian Program, which aims to protect river buffer zones (Ministry of Environment).
- b. The Smart Cities Program, which utilizes Green Data Centers as digital infrastructure to support the integrated and sustainable management of urban green open space data (Ministry of Communication and Digital Affairs).
- c. The Green City Movement, which promotes environmentally friendly, energy-efficient, and technology-based urban planning, as well as the revitalization of watersheds (DAS), lakes, and rivers (Ministry of Public Works and Housing (PUPR)).
- d. The Sustainable Cities Impact Project, funded by the World Bank, to integrate green open space into urban development to reduce negative impact on the environment (the Ministry of National Development Planning/National Development Planning Agency (Bappenas)).
- e. The development of Biodiversity Parks/*Taman Kehati*, Provincial Grand Forest Parks/Tahura, and Urban Forests (Local Governments).



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A study on urban biodiversity by Yayasan Kehati provides initial evidence highlighting that several cities in Indonesia have developed a Master Plan for Biodiversity Management (*Rencana Induk Pengelolaan Keanekaragaman Hayati*/RIP Kehati). To date, a total of 30 local governments have established RIP Kehati (Ministry of Environment, 2025).

Stakeholders contributing to the achievement of this target include the Ministry of Home Affairs (Kemendagri), the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), the Ministry of Environment (KLH/BPLH), the National Research and Innovation Agency (BRIN), the Regional Governments (Provincial and City/Regency), and non-state actors such as Yayasan Kehati and Belantara Foundation.

Main Outcomes Achieved

Headline Indicator 12.1 – Average share of the built-up area of cities that is green/blue space for public use for all

The availability of various national policies on the provision and management of Green and Blue Open Spaces demonstrates Indonesia's commitment to protecting and enhancing biodiversity, particularly in urban areas. These policies position green and blue spaces not only as elements of urban planning but also as important habitats, ecological corridors, and providers of ecosystem services that support species conservation, landscape connectivity, and the resilience of urban ecosystems.

While regulations require a minimum of 30% open space provision, further integration of green and blue spaces into spatial planning documents is needed, with a stronger emphasis on ecological functions and environmental quality. National policies directly contribute to urban biodiversity conservation, the reduction of habitat fragmentation, increased vegetation cover, and the protection of urban aquatic ecosystems. These spaces also serve as inclusive, nature-based education and recreation areas for the public, thereby strengthening social support for conservation efforts.

At present, the monitoring of Green and Blue Open Spaces (GBOS) through the Land Cover Quality Index (LCQI) remains focused on green open spaces and does not yet fully capture urban blue spaces. Therefore, further development and refinement of the LCQI monitoring methodology are required to incorporate blue space components, including rivers, lakes, reservoirs, and other water bodies.

These efforts should be supported by cross-sectoral data integration, the harmonization of definitions and classifications of blue spaces, and the use of nationally standardized spatial and remote sensing data. In addition, strengthening reporting systems is necessary to ensure accurate calculation of the proportion of public green and blue spaces relative to built-up urban areas, including aspects of accessibility and ecological function, to enable more comprehensive monitoring.

However, Indonesia has not yet undertaken the calculation of the average share of built-up urban areas allocated to green and blue spaces for public use, as the necessary underlying data components are not yet available.

National Indicator 11.a – Percentage of urban green and blue open spaces relative to total urban area

Indonesia is currently in the process of fulfilling the indicator on the percentage of urban Green and Blue Open Spaces relative to built-up urban areas. Several major cities have begun to implement urban planning approaches that take biodiversity considerations into account through the provision of urban parks, urban forests, green corridors, urban mangrove areas, river revitalization initiatives, and other publicly accessible blue spaces. These practices demonstrate initial commitment and tangible progress in integrating biodiversity conservation into urban development. During the reporting period 2020–2024, a total of 20 out of 514 regencies/cities in Indonesia have achieved more than 30% Green Open Space (RTH) coverage.

Indonesia monitors green open space through the calculation of the Land Cover Quality Index (*Indeks Kualitas Tutupan Lahan*/IKTL), which focuses exclusively on green areas and does not yet incorporate blue spaces. The types of green open spaces used in the IKTL calculation for the 2020–2024 period refer to the [Minister of Environment and Forestry Regulation No. 27/2021](#). Green open space data are submitted by local governments, subsequently verified by a team from the Ministry of Environment and Forestry, and the verified data are used to calculate the IKTL score. The 30% threshold is calculated based on the ratio of the verified green open space area to the administrative area, with data sourced from the Environmental Quality Index (*Indeks Kualitas Lingkungan Hidup*/IKLH) application. Data on the extent of green open space at the regency/city level are also available through the [National Solid Waste Management Information System \(SIPSN\)](#) as part of the Adipura evaluation process.

Summary of key challenges encountered and different approaches that may be taken for further implementation

The development and management of green and blue open spaces in Indonesia's urban areas continue to face multiple cross-sectoral challenges. From a policy and regulatory perspective, the criteria used to implement minimum of 30% requirement for green open spaces remains inconsistent which affected the calculation of the proportion of green open spaces in urban areas.

In addition, inclusivity aspects and the integration of green and blue open spaces into spatial plans (*Rencana Tata Ruang Wilayah*/RTRW and *Rencana Detail Tata Ruang*/RDTR) are still limited. Competition for spatial use of spaces create more pressure to the establishment of green and blue open spaces.

To address these challenges, stronger policy harmonization and enforcement are required through more operational national guidelines, the integration of inclusivity principles into technical regulations, and mandatory incorporation of green and blue open spaces into spatial planning documents, accompanied by the mainstreaming of nature-based solutions in urban planning. From an institutional perspective, strengthening cross-sectoral coordination and multi-stakeholder collaboration is essential, including clearer delineation of roles among institutions and the active engagement of communities, the private sector, academia, and non-governmental organizations.

Furthermore, limitations in financing and human resource capacity need to be addressed through increased subnational budget allocations, the development of alternative financing mechanisms (such as public-private partnerships, corporate social responsibility schemes, and green financing), and the strengthening of technical capacity through training and collaboration with educational and research institutions. The optimization of science and technology, including the use of GIS, remote sensing, and the development of methodologies that integrate green and blue spaces, is also critical to support effective monitoring and evaluation. All these efforts need to be underpinned by improvements in inclusive green and blue open spaces infrastructure and the strengthening of an integrated national data and reporting system to ensure sustainable green and blue open spaces management and to support the achievement of national and global biodiversity targets.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Urban Green Open Space Provision in the City of Surabaya

The City of Surabaya has emerged as a leading example of urban environmental planning in Indonesia through its successful provision and expansion of Urban Green Open Spaces (Ruang Terbuka Hijau/RTH).

Surabaya's approach demonstrates how a mid-sized city can integrate green infrastructure into its urban development strategy, delivering environmental, social, and public health benefits for its citizens. (notes: *tambahkan foto dari DLH Jatim, DLH kota surabaya*)

According to the Surabaya City Government, the total area of green open spaces in the city reached 7,358.87 ha, which represents 22% of the city's total land area surpassing the national regulatory minimum for public green space. This achievement reflects proactive planning and sustained municipal commitment to urban greening and environmental quality.

The green open space portfolio in Surabaya comprises a diverse mix of ecological and recreational areas, including:

- Protected green zones and conservation areas – 4,570.33 ha
- Parks and green corridors – 1,672.75 ha
- Sports fields and stadia open spaces – 361.08 ha
- Public cemeteries functioning as green space – 284.95 ha
- Reservoirs, lakes, and water bodies with vegetation – 198.23 ha
- Urban forest and large public gardens – 66.03 ha
- Green space within residential and public facility areas – 205.50 ha

This comprehensive green space network supports ecosystem services, including air quality improvement, carbon sequestration, and urban heat reduction. City leadership estimated that Surabaya's RTH network has the capacity to absorb approximately 642,794.59 tons of CO₂ annually, positively influencing local air quality and contributing to climate mitigation efforts.

Surabaya's green space achievements are grounded in both national and local policy frameworks. National legislation, including Law No. 26 of 2007 on Spatial Planning and technical guidance from the Ministry of Public Works and Housing, mandates a minimum of 20% public green open space in urban areas. Surabaya has not only met but exceeded this benchmark through strategic land allocation, innovative urban planning, and strong political leadership. Local regulatory support, such as Surabaya City Regulation No. 7 of 2002 on Green Open Space Management, provides the legal basis for systematic planning and maintenance of green spaces throughout the city.

The expansion of green spaces has delivered measurable environmental co-benefits. Improved vegetation cover contributes to enhanced air quality, reduced urban heat island effects, and improved stormwater management. Surabaya's air quality index (*Indeks Kualitas Udara*) has consistently exceeded national averages, earning the city awards for clean air at regional environmental events.

Beyond environmental improvements, RTHs serve as community spaces for recreation, physical activity, education, and social gatherings. Parks and green corridors are widely used by residents, including children and seniors, enhancing the quality of life and community well-being.

References

- Surabaya City Government – “Ruang Terbuka Hijau in Surabaya Reaches 22%, Exceeding National Target.” <https://surabaya.go.id/id/berita/12113/lampai-target-pemerintah-pusat-ruang-terbuka-hijau-di-surabaya-capai-22-persen>
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- Surabaya City Regulation No. 7 of 2002 on RTH Management (Perda RTH). <https://jdih.surabaya.go.id/peraturan/317>

Urban Green Open Space Development in DKI Jakarta

The Special Capital Region of Jakarta (DKI Jakarta) demonstrates a strong best practice in advancing Urban Green Open Spaces (*Ruang Terbuka Hijau/RTH*) through systematic planning, data-driven management, and diversification of green space typologies in a highly urbanized metropolitan setting. Despite severe land scarcity and high population density, Jakarta continues to expand and manage its green infrastructure as a core component of environmental sustainability, public health, and climate resilience.

Based on the RTH Jakarta Dashboard (*Jakarta Satu Platform*), DKI Jakarta currently manages 2,232 green open space objects, distributed across a wide range of functional categories. These include 1,710 green corridors (*jalur hijau*), 1,335 neighborhood parks (*taman lingkungan*), 112 urban forests (*hutan kota*), and 83 city parks (*taman kota*). Additional green space types include 110 cemeteries (*pemakaman*) that function as green areas, 130 interactive parks, 18 sports fields, and 17 plant nurseries (*kebun bibit*) that support greening and restoration efforts.

Jakarta has also integrated community-scale green spaces into its urban fabric, such as 4 community unit parks (*Taman Rukun Warga*) and 2 neighborhood unit parks (*Taman Rukun Tetangga*), strengthening social inclusion and neighborhood-level access to green spaces. Specialized ecosystem-based spaces are also maintained, including 4 mangrove ecosystem zones, which play a critical role in coastal protection, biodiversity conservation, and climate adaptation. Supporting green elements further include green spaces along electricity transmission corridors, urban fields (*lapang*), and other functional green areas.

This diversified portfolio of green open spaces enables Jakarta to deliver multiple ecosystem services, including flood mitigation, improved air quality, reduction of urban heat island effects, and enhanced urban biodiversity. Urban forests, mangroves, and green corridors contribute to ecological connectivity, while parks and neighborhood green spaces provide accessible recreational areas that enhance physical and mental well-being for residents.

Institutionally, Jakarta's RTH development is underpinned by strong regulatory frameworks, including national spatial planning mandates and provincial regulations, as well as integrated spatial data systems through the Jakarta Satu platform. This ensures transparency, monitoring, and evidence-based decision-making in green space planning and management. Community participation is further promoted through neighborhood-based park management and environmental stewardship programs.

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- Dinas Lingkungan Hidup DKI Jakarta. Dashboard RTH Jakarta – Jakarta Satu Platform. <https://jakartasatu.jakarta.go.id>
- Provincial Government of DKI Jakarta. Urban Green Open Space and Urban Forest Programs. <https://lingkunganhidup.jakarta.go.id>

Indicator Data

Binary Indicator 12.b Number of countries with biodiversity-inclusive urban planning referring to green or blue urban spaces.

12.1 Does your country have urban areas implementing biodiversity-inclusive urban planning that incorporates the management of green or blue spaces for the conservation and sustainable use of biodiversity?

Partially

12.2 Does your country have urban areas implementing biodiversity-inclusive urban planning that incorporates the management of green or blue spaces for ecosystem services and nature's contributions to people?

Partially

Comments

Based on the assessment of Indonesia's implementation, Indicator 12.b is evaluated as "partially." This reflects that some cities have implemented biodiversity-inclusive urban planning and have established public green and/or blue open spaces. However, at the national level, such implementation has not yet been adopted across all cities in Indonesia.

Indonesia has established a national policy framework regulating the development of green and blue open spaces in urban areas through Law No. 26/2007 on Spatial Planning and Government Regulation No. 21/2021 on the Implementation of Spatial Planning, which requires the provision of at least 30 percent green open space (RTH). Green and/or blue open spaces (RTH/RTB) are mandatory elements to be integrated into Regional Spatial Plans (RTRW) and Detailed Spatial Plans (RDTR). In addition, the application of Strategic Environmental Assessments (*Kajian Lingkungan Hidup Strategis*/KLHS) aims to ensure that biodiversity and ecosystem services are taken into account in the preparation of regional development plans.

Several major cities in Indonesia have implemented urban planning approaches that consider biodiversity through the development of public city parks, urban forests, green corridors, mangrove areas, river revitalization initiatives, and other publicly accessible blue spaces. However, the implementation of urban planning that explicitly integrates biodiversity conservation remains uneven across urban areas, and the quality of data varies between regions.

To date, Indonesia does not yet have an integrated national system to calculate the average proportion of public green and blue spaces relative to built-up areas across all cities. Data collection and reporting systems are currently under development.

National Indicator 11.a Percentage of urban green and blue open spaces relative to total urban area

No data available

Data not yet available, as national monitoring currently covers green open spaces only, while standardized data and methodologies for blue open spaces are still under development. Indonesia is in the process of integrating both into urban planning and reporting systems.

National Biodiversity Target 12

Sustainable Use and Fair and Equitable Sharing of Benefits From the utilization of Genetic Resources and Traditional Knowledge



KMGBF GOAL C

Share Benefits Fairly



KMGBF Target 13

Sustainable Development Goals



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 Main actions taken to implement the target

Implementation of National Biodiversity Target 12 focuses on sustainable use and the fair and equitable sharing of benefits arising from genetic resources and associated traditional knowledge. Under the IBSAP 2025–2045, these efforts are organized into five action groups, as follows:

- 12.1 Strengthening institutional frameworks for the management of Access and Benefit-Sharing from the utilization of genetic resources and traditional knowledge;
- 12.2 Facilitating customary and local communities to access, fair, and equitable benefit-sharing from the utilization of genetic resources and traditional knowledge;
- 12.3 Sustainable utilization of genetic resources;
- 12.4 Developing and strengthening of Digital Sequence Information (DSI) data and information system;
- 12.5 Developing standards for the management of agricultural, forestry, and fisheries genetic resources.

 Summary of progress towards the target, including the main outcomes achieved

National Biodiversity Target 12 focuses on establishing effective Access and Benefit-Sharing (ABS) mechanisms through strong legal and regulatory frameworks to uphold fairness and equity in the use of genetic resources and associated traditional knowledge. Indonesia has developed and refined various national legal instruments related to the utilization of genetic resources. Over the past decade, Indonesia has enacted and updated a range of regulations covering science and technology, plant genetic resources for food and agriculture, animal genetic resources, plantations, plant variety protection, horticulture, and management of microorganisms. These efforts, including the ratification of the Nagoya Protocol and the issuance of regulations governing access to wild genetic resources and benefit-sharing, reflect the country's commitment to establishing a coherent and enabling ABS framework.

In Indonesia, the governance and utilization of Digital Sequence Information (DSI) are addressed within the broader framework of national sovereignty over biodiversity and genetic resources. In practice, DSI is considered to be closely linked to biological diversity and the use of genetic resources. Accordingly, international principles under the Nagoya Protocol, such as Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT), continue to serve as important normative references.

Indonesia is progressively strengthening the governance of genetic data, traceability mechanisms for utilization, and the integration of DSI considerations within the Access and Benefit-Sharing (ABS) system. These ongoing efforts aim to support research, innovation, and scientific collaboration, while ensuring fairness, legal certainty, and due regard for national interests.

Non-State Actors (NSAs) contribute to National Biodiversity Target 12 by supporting the strengthening of Access and Benefit-Sharing (ABS) governance and equitable utilization of genetic resources. Their contributions include providing technical inputs to policy and legal reform processes, supporting the development of frameworks on fair benefit-sharing and biodiversity financing, documenting scientific bases for resource utilization quotas, and conducting socio-economic studies related to the use of genetic resources. Private sectors contribute through responsible research and development, plant breeding activities, and conservation of genetic resources, in alignment with national ABS principles and regulatory requirements.

Stakeholders supporting the achievement of this target include the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Finance (Kemenkeu), the National Research and Innovation Agency (BRIN), the Ministry of Law (Kemenkum), the National Standardization Agency of Indonesia (BSN), and non-state actors, such as the Wildlife Conservation Society-Indonesia Program, Fauna & Flora Indonesia, Yayasan Kehati, and CropLife Indonesia. Private sectors include such as PT. Bambu Nusa Verde, PT. Bayer Indonesia, PT. Astra Agro Lestari Tbk, PT. Pertamina Patra Niaga AFT BIL, PT. Sipef Biodiversity Indonesia, PT. Bio Farma (Persero), PT. Pertamina Patra Niaga - AFT Supadio, and PT. East West Seed Indonesia.

Main Outcomes Achieved

National Biodiversity Target 12 is monitored through two national indicators that are directly related to two KMGBF Headline Indicators (C.1 and C.2). Both global and national indicators are still under development, and therefore definitive methodologies have not yet been established. As a result, not all progress can be fully captured in this Seventh National Report. It is expected that more comprehensive progress will be reported in subsequent national reports.

Headline Indicator C.1 – Monetary benefit received; and

National Indicator 12.b – Economic value generated from the utilization of genetic resources, including through the ABS mechanism.

The headline and national indicators are conceptually aligned and address the same underlying meaning: the monetary and economic benefits arising from the utilization of genetic resources. In Indonesia, such data remain dispersed across sectors, and the Government of Indonesia is currently developing an integrated system to consolidate and capture this information comprehensively.

In 2024, a total of IDR 251.8 billion was identified as sales value generated from access to genetic resources in the agricultural sector (**Table 12.1**), with corresponding royalty revenues amounting to IDR 5.7 billion. These values were derived from intellectual property outputs, including patents, plant variety protection (*Perlindungan Varietas Tanaman/PVT*), trade secrets, copyrights, and trademarks. This value remains relatively modest, as data from other sectors have not yet been consolidated.

Table 12.1. Economic values received from the utilization of genetic resources (Ministry of Agriculture, 2023-2024)

Commodity	Type of IP	Number of Licenses	Sales Value (2024) (IDR)	Annual Royalty Rate	Royalty Received (IDR)
Combined AI HPAI and LPAI Vaccine (IDP000056903)	Patent	1	50,018,127,390.00	2%	502,089,016.00
Kula Sadewa Hybrid Maize (015/PrnMTS/2017)	PVT	33	193,104,957,519.00	2%	4,850,315,124.00
KENAF Karangploso 15 (No. 00007/PPVT/3/2007)	PVT	1	290,136,000.00	10%	29,013,600.00
Dengue Hemorrhagic Fever Herbal Formulation (DEHAF)	Trade Secret	1	8,301,553,953.00	2%	166,031,079.00
Process for Producing a Health Beverage from Mangosteen Peel Extract	Patent	1	-	-	130,000,000.00

Indonesia also recorded [export value from livestock commodities](#) between 2019 and 2023, reflecting the utilization of genetic resources in the field of animal medicine, as illustrated in **Figure 12.1**.

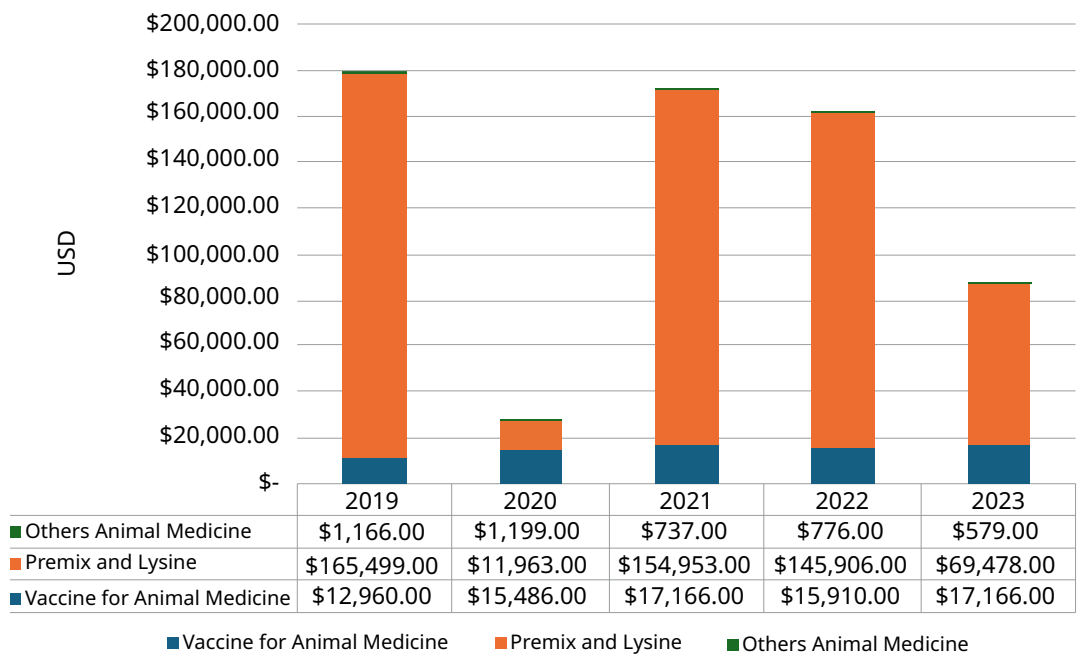


Figure 12.1 Export Values from Livestock Commodities

Headline Indicator C.2 – Indicator on non-monetary benefit received; and

National Indicator 12.a – Number of Mutually Agreed Terms (MAT) documents for access to and benefit-sharing from the utilization of genetic resources and/or traditional knowledge.

Similar to Headline Indicator C.1, the methodology for Indicator C.2 is still under development. In relation to Target 12, Indonesia operationalizes this indicator as the number of access permits issued for genetic resources. At present, these documents are not yet disaggregated to distinguish between access that has generated monetary benefits and access that has not.

Strengthening institutional management, facilitating the participation of customary and local communities in ABS mechanisms, enhancing Digital Sequence Information (DSI) systems, and developing standardized procedures constitute Indonesia's key priorities for this national target.

As of 2024, a total of 231 access permits for wildlife genetic resources had been issued by the Ministry of Forestry (**Figure 12.2**). These access permits are granted subject to compliance with MAT and FPIC requirements. These data cover access to wildlife genetic resources in terrestrial ecosystems only and therefore do not yet include access to marine genetic resources. In addition, Indonesia has strengthened facilitation for customary and local communities. By 2025, a total of 95 customary communities and 7 local communities had received benefit-sharing facilitation through 107 FPIC agreements, underscoring Indonesia's commitment to inclusive and community-centered ABS implementation.

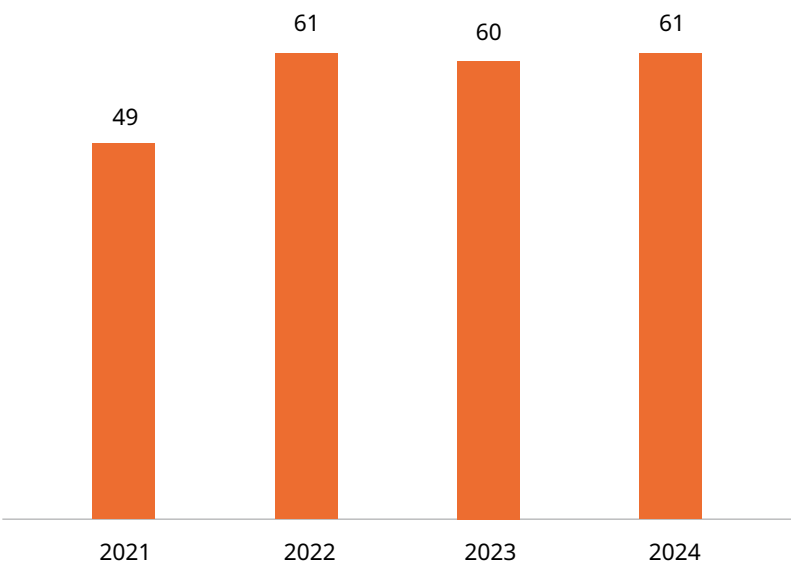


Figure 12.2. Number of access permits to wildlife genetic resources.

In the agricultural sector, as of 2025, a total of 203 agricultural genetic resources, namely 120 livestock breeds or lines and 83 crop varieties, have been accessed and utilized. The generation and documentation of Digital Sequence Information (DSI) have been recorded in the national database, including 1,364 rice accessions, 7 microbial accessions, 2 horticultural commodities, and one Bali cattle metagenome sequence.

Private sector engagement continues to expand, with eight companies actively participating in the regulated utilization of genetic resources. In parallel, Indonesia has strengthened sustainable production systems through the development of 249 environmental and forestry standards, 147 agricultural standards, and 131 fisheries standards, reinforcing the integration of sustainability principles across key sectors.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Indonesia continues to strengthen its national Access and Benefit-Sharing (ABS) system while addressing several structural and operational challenges in policy development, institutional coordination, financial arrangements, human resource capacity, scientific readiness, infrastructure, and data integration.

- 1. Policy
Although Indonesia has advanced various regulations related to genetic resources, the rapid emergence of modern biotechnologies—such as genome editing and other genetic modification techniques, requires continuous refinement of legal frameworks. Indonesia is responding to this by harmonizing sectoral regulations and progressively expanding ABS mechanisms so that they apply not only to wildlife and animal genetic resources but also to plant-based commodities and new biotechnological applications.
- 2. Institutionally
Coordination across ministries and between national and subnational governments remains a significant challenge, particularly in ensuring consistent procedures for access permits, Prior Informed Consent (PIC), and the Mutually Agreed Terms (MAT). Indonesia is addressing this through strengthened technical facilitation, clearer administrative processes, and enhanced support for local authorities, enabling them to play a more active role in ABS administration.

3. Financial

Financial mechanisms for benefit-sharing also require further operational clarity. While recent reforms have integrated ABS revenues into the state non-tax revenue (PNBP) system, Indonesia is now developing detailed guidelines on valuation, royalty calculation, commercial benefit-sharing, and intellectual property arrangements to ensure that benefit-sharing is transparent, fair, and proportional.
4. Human Resource

Human resource capacity remains another area of challenge, particularly at the subnational level, where expertise in genetic identification, characterization, and legal-scientific documentation is still limited. To address this, Indonesia is expanding capacity-building programs, technical training, and mentoring schemes, working closely with research institutions and universities to strengthen expertise nationwide.
5. Scientific and technological capacity

Scientific and technological capacity presents additional challenges, especially the need for broader access to advanced tools such as Whole Genome Sequencing (WGS) and molecular diagnostics, which are essential for accurate characterization of genetic resources and for informing ABS decision-making. Indonesia is progressively enhancing laboratory capabilities and promoting cross-sector technology transfer to ensure that scientific advancements can be applied across regions and sectors.
6. Infrastructure

Infrastructure gaps, including limited certified testing facilities, sample repositories, and digital systems to support ABS procedures, also pose challenges. Indonesia is therefore investing in laboratory development and improving digital platforms for ABS registration, monitoring, and benefit-sharing oversight.
7. Data

Data integration remains a key challenge. National databases for genetic resource identification, characterization, provenance, and benefit-sharing are not yet fully integrated across sectors and regions. In response, Indonesia is working toward establishing a centralized and interoperable national data system that links genetic, legal, and utilization information, enabling more comprehensive policy-making and ensuring consistency with international reporting obligations.
- research activities on biodiversity enrichment, genetic diversity of key species, and ecosystem functions in transformed landscapes.

Benefits shared with Indonesian partners go beyond financial contributions and include non-monetary benefits such as:

 - targeted research grants and ABS-funded projects for Indonesian researchers and institutions;
 - capacity-building through joint workshops, scientific retreats, and training in field methods, genetic analysis, and scientific writing;
 - co-authorship in international scientific publications, with several studies explicitly acknowledging funding from CRC 990 ABS funds.

The CRC 990 consortium also provides a practical example of how ABS can be embedded from the outset in international research governance. The Indonesian university consortium (IPB, Universitas Jambi, Universitas Tadulako) and the University of Göttingen formalized roles and responsibilities through Memoranda of Agreement, including clauses on collection permits, MTAs, and data exchange, thereby ensuring that research on Indonesian genetic resources and associated biodiversity respects national regulations and sovereignty while generating shared scientific and socio-economic benefits.

This experience illustrates how Indonesia has moved from a purely regulatory approach to a more implementation-oriented ABS model in the period 2018–2025, using a flagship international research collaboration to: (i) operationalize Nagoya Protocol principles in practice, (ii) channel benefits directly to Indonesian research institutions and local partners, and (iii) strengthen national capacity in biodiversity science and governance.

 Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Operationalizing ABS in International Research Collaboration – CRC 990 “EForTS”

Since 2013, Indonesia has implemented a concrete model of Access and Benefit-Sharing (ABS) within the Collaborative Research Centre 990 “Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems” (CRC 990 – EForTS), a long-term research partnership between Indonesian universities (IPB University, Universitas Jambi, Universitas Tadulako) and the University of Göttingen, Germany.

In this collaboration, the Nagoya Protocol principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) are translated into operational practice through a combination of access permits, Material Transfer Agreements (MTAs), data-sharing agreements, and a dedicated ABS funding scheme. The German Research Foundation (DFG) approved specific “ABS measures” for CRC 990, providing Access-Benefit-Sharing (ABS) funds that are used to support Indonesian partners and stakeholders, including

References:

- CRC 990 – EForTS “ABS measures within EForTS” (University of Göttingen): <https://www.uni-goettingen.de/en/abs%2Bmeasures%2Bwithin%2Befforts/566705.html>
- CRC 990 Newsletter (DFG-funded ABS measures and Indonesian consortium): https://www.crc990.uni-goettingen.de/Newsletter/EForTS_News_2023_web
- IPB University news on CRC 990/EForTS Indonesia Consortium: <https://ppid.ipb.ac.id/rektor-ipb-university-bawa-70-peneliti-ke-jerman-hadiri-pertemuan-ilmiah-kerjasama-riset-crc990-efforts>
- Universitas Jambi / Faculty of Forestry: list of research funded by CRC 990 ABS Funds: <https://kehutanan.unja.ac.id/kerjasama>
- Example of a scientific article acknowledging CRC 990 ABS funds: <https://www.frontiersin.org/articles/10.3389/frbee.2024.1366287/full>

Indicator Data

Headline Indicator C.1 Monetary benefits received in accordance with applicable internationally agreed access and benefit-sharing instruments; and

National Indicator 12.b. Economic value derived from the utilization of genetic resources, including through ABS mechanisms

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
C.1 Monetary benefits received in accordance with applicable internationally agreed access and benefit-sharing instruments	Royalty Received	Human Health	2024	IDR Million	296	Cumulative 2023-2024
		Animal Health	2024	IDR Million	502	Cumulative 2023-2024
		Value-added Crop	2024	IDR Million	488	Cumulative 2023-2024
	Export Value	Animal Medicines	2023	USD Million	87.7	Animal medicines (vaccine, premix and lysine, others)
		Animal Medicines	2022	USD Million	162.6	Animal medicines (vaccine, premix and lysine, others)
		Animal Medicines	2021	USD Million	172.8	Animal medicines (vaccine, premix and lysine, others)
		Animal Medicines	2020	USD Million	136.3	Animal medicines (vaccine, premix and lysine, others)
		Animal Medicines	2019	USD Million	179.6	Animal medicines (vaccine, premix and lysine, others)

Indonesia has strengthened its policy and institutional framework for access and benefit-sharing from the utilization of genetic resources and its associated traditional knowledge, in line with national legislation and international commitments.

Progress has been made in identifying economic benefits derived from the utilization of genetic resources, particularly in the agricultural sector. In 2024, sales generated from access to genetic resources reached IDR 251.8 billion, with corresponding royalty revenues of IDR 5.7 billion, based on intellectual property outputs such as patents, plant variety protection, and related rights. Data on monetary benefits from genetic resource utilization remain fragmented across sectors, and current estimates likely underestimate total values, as information from non-agricultural sectors has not yet been fully consolidated. Thus, Indonesia is developing an integrated system to harmonize and consolidate data across sectors.

Headline Indicator C.2 Non-monetary benefits arising from applicable international access and benefit-sharing instruments

No data available

Indonesia recognizes the importance of customary and local communities' traditional knowledge in biodiversity conservation and sustainable use. Progress under Indicator C.2 has been achieved through the operationalization of access permits for genetic resources. As of 2024, 231 access permits for terrestrial wildlife genetic resources have been issued in compliance with the Mutually Agreed Terms (MAT) and Free Prior and Informed Consent (FPIC) requirements. Indonesia has also strengthened inclusive ABS implementation, with 95 customary communities and 7 local communities supported through 107 FPIC agreements. In the agricultural sector, 203 genetic resources (120 livestock breeds/lines and 83 crop varieties) have been accessed and utilized, alongside the documentation of Digital Sequence Information (DSI) in the national database. Private sector engagement has expanded, with eight companies participating in regulated genetic resource utilization. While legal recognition and policy frameworks are in place, practical mechanisms for documenting, protecting, and sharing benefits from genetic resources and traditional knowledge remain under development. Indonesia is prioritizing strengthening institutional management, standardizing ABS procedures, enhancing DSI systems, and expanding the participation of customary and local communities. These efforts are complemented by the development of sustainability standards across the forestry, agriculture, and fisheries sectors, which support a more coherent and inclusive benefit-sharing framework.

Binary Indicator 13.b Number of countries that have taken effective legal, policy, administrative, and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits arising from the utilization of genetic resources, digital sequence information on genetic resources, and traditional knowledge associated with genetic resources.

13.1 Does your country have effective legal, administrative, and policy measures in place to ensure the fair and equitable sharing of benefits arising from the utilization of genetic resources?

Partially

13.2 Does your country have capacity-building measures to ensure the fair and equitable sharing of benefits arising from the utilization of genetic resources?

Under development

13.3 Has your country taken administrative, policy, or legislative measures in accordance with the operationalization of the multilateral mechanism established under decision 16/2?

No

13.4 Do the measures mentioned in questions 13.1 and 13.2 include the utilization of traditional knowledge associated with genetic resources?

Not applicable

13.5 Does your country monitor the monetary benefits received from the utilization of genetic resources and/or traditional knowledge associated with genetic resources that were accessed from your country?

No

13.6 Does your country monitor the non-monetary benefits received from the utilization of genetic resources and/or traditional knowledge associated with genetic resources that were accessed from your country?

Partially

13.7 Does your country have measures in place to ensure fair and equitable benefit-sharing arising from the utilization of genetic resources and/or traditional knowledge associated with genetic resources that were accessed in another country?

Partially

National Indicator 12.a. Number of joint agreement documents on access to and benefit-sharing (ABS) for the utilization of genetic resources and/or traditional knowledge

Use national data set

Indicator	Year	Unit	Value	Footnote
12.a. Number of joint agreement documents on access to and benefit-sharing (ABS) for the utilization of genetic resources and/or traditional knowledge	2024	Number of access permits to wildlife genetic resources	61	
	2023	Number of access permits to wildlife genetic resources	60	
	2022	Number of access permits to wildlife genetic resources	61	
	2021	Number of access permits to wildlife genetic resources	49	

National Biodiversity Target 13

Enhancement and Transfer of Knowledge, Science, and Technology through Strengthened Research and Innovation Capacity



KMGBF GOAL B

Prosper with Nature



KMGBF Target 20

Sustainable Development Goals



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© Center for Agricultural Biotechnology and Genetic Resources Instrument Standard Testing, Ministry of Agriculture



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 Main actions taken to implement the target

Indonesia's commitment to enrichment and transfer of knowledge science and technology through strengthening of research and innovation capacity under the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2025–2045 is being implemented through eight key actions, as follows:

- 13.1 Strengthening capacity and infrastructure research, technology, and innovation;
- 13.2 Strengthening capacity and networking of scientific collection and biodiversity;
- 13.3 Disclosure and documentation of biodiversity;
- 13.4 Enhancement of intellectual property derived from biodiversity;
- 13.5 Developing new varieties of local species;
- 13.6 National and International cooperation in access to and transfer of new technologies and innovations related to biodiversity; and
- 13.7 Spatial mapping of inventoried biodiversity distribution.

 Summary of progress towards the target, including the main outcomes achieved

National Target 13 aims to enhance and facilitate the generation, exchange, and transfer of knowledge, science, technology, and innovation to strengthen biodiversity conservation and sustainable use. Indonesia has established monitoring stations managed by both government agencies and ministries and non-state actors. Two monitoring stations were operational in 2023, increasing to six in 2024 and five in 2025. In addition to monitoring stations, Indonesia has also developed infrastructure for biodiversity management and conservation. As of 2025, there are ten officially recorded scientific collection facilities in Indonesia, including the Botanical Gardens in Bogor, Cibodas, Purwodadi, Bali, Cibinong, Herbarium Bogoriense (BO), Museum Zoologicum Bogoriense (MZB), and current depository institutions such as the Indonesia Culture Collection (microorganisms), Seed Bank, Xylarium, and the Agricultural Gene Bank. In 2025, these scientific collection facilities collectively housed 1,328,879 scientific specimens and 12,303 accessions in the gene bank.

Human resource capacity building related to research, technology, and innovation includes academic studies (undergraduate, master's, and doctoral programs) that focus on biodiversity research, which are facilitated at the National Research and Innovation Agency (BRIN) and universities across 38 provinces. In addition, numerous technical guidance activities were provided by several ministries, such as the Ministry of Forestry and the Ministry of Marine Affairs and Fisheries (KKP). Several funding and scholarship facilities for education have been developed, such as the Indonesia Endowment Fund for Education (*Lembaga Pengelola Dana Pendidikan/LPDP*) at the national level, Degree by Research (DbR) schemes at the National Research and Innovation Agency (BRIN), and various schemes at universities under the Ministry of Higher Education. Additionally, capacity-building efforts include visiting researchers collaborating with international research partners, and vice versa.

From 2018 to mid-2024, a total of 220 individuals participated in international collaborations with BRIN. This number is likely to be higher, as many individuals involved in research and technology improvement related to biodiversity at universities are not yet accounted for.

Several government agencies, in addition to universities and non-state actors, are involved in numerous international cooperation projects related to research and advanced technologies on biodiversity. The number has increased from three in 2018 to 18 in 2021, 95 in 2022, 96 in 2023, and 70 in 2024. Through these international collaborations, Indonesia has engaged in South-South Cooperation, North-South

Cooperation, and Triangular Cooperation. Key countries collaborating with Indonesia on biodiversity include Malaysia, Singapore, the United Kingdom, Japan, the United States, China, Australia, Germany, and others.

Nationally, in 2022, 208 national collaborations were recorded between BRIN and universities, NGOs, private sectors, and local governments. The number of collaborations has continued to grow, with 334 collaborations in 2023 and 278 collaborations in 2024 in the field of biodiversity.

In line with science and technology development, Indonesia, through BRIN, is developing biobank facilities. These facilities will contain blood, plasma, and serum samples, serving as essential resources for research in conservation, biomedicine, genomics, and public health. The development of Biobanks has also been initiated in zoos, such as Taman Safari, for the collection of Sumatran tiger (*Panthera tigris sumatrae*) and Banteng (*Bos javanicus*) sperm samples.

Indonesia's recorded biodiversity in 2017 totaled 80,583 species, increasing to 89,101 species by 2024. Of the 2024 total, 81,260 species are terrestrial and 7,841 are marine. Recorded diversity also includes 31,031 plant species, 871 macrofungi, 10,160 prokaryotic microorganisms, and 4,249 eukaryotic microorganisms.

Scientific collections continue to increase within the national depository facilities (Herbarium Bogoriense (BO), Museum Zoologicum Bogoriense (MZB), Indonesia Culture Collection (InaCC), Botanical Gardens). In 2024, 2,175 new collections were added. The Herbarium Depokensis, managed by Universitas Indonesia, recorded 110 herbarium specimens in 2024. From 2018 to 2025, a total of 386 new species of flora, fauna, and microorganisms were documented. This number still does not fully reflect all biodiversity discoveries, as many findings at universities have not yet been documented in databases.

In addition, research and monitoring technology stations further strengthen Indonesia's scientific infrastructure for biodiversity management. These stations integrate field research, biodiversity and genetic monitoring, and spatial analysis using tools such as SMART Patrol, camera traps, bioacoustics, DNA barcoding, environmental DNA (eDNA), and remote sensing technologies including drones, LiDAR, and satellite imagery. The integration of these technologies enhances data accuracy, long-term ecological monitoring, and evidence-based conservation planning.

Non-State Actors (NSAs), including civil society organizations, research institutions, and the private sector, contribute to National Target 13 by strengthening research, knowledge development, and innovation capacity related to biodiversity conservation. Their contributions include research and monitoring activities, management of research facilities, training and technical workshops, and collaborative initiatives with government, universities, and international partners. Private sector actors also support environmental monitoring systems, applied research, and technology transfer through corporate sustainability programs and partnerships. These efforts enhance scientific capacity, promote knowledge exchange, and support evidence-based biodiversity management.

Stakeholders contributing to the achievement of this target include the National Research and Innovation Agency (BRIN), the Ministry of Higher Education, Science, and Technology (Kemendikristek), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of Law (Kemenkum), the Ministry of Foreign Affairs (Kemenlu), Geospatial Information Agency (BIG), Indonesian Quarantine Agency (Barantin), Local Governments (Provincial and City/Regency), and non-state actors such as Belantara Foundation, PILI Green Network, Resiliensi Bulan Hijau, Forum Konservasi Orangutan Indonesia, Global Youth Biodiversity Network - Chapter Indonesia, Konservasi Indonesia, Yayasan SINTAS Indonesia, Wildlife Conservation Society - Indonesia Program, Species Obscura, CropLife Indonesia, Fauna & Flora Indonesia.

Contributions from private sectors include PT. ANTAM Tbk UBPB Kalimantan Barat, PT. Pertamina Patra Niaga AFT BIL, PT. Panarub Industry, PT. Sipef Biodiversity Indonesia, PT. Kilang Pertamina Internasional RU II Dumai, PT. PGE Tbk Area Kamojang, PT. Solusi Bangun Indonesia Tbk, PT. PLN (Persero), PT. Semen

Indonesia Tbk, PT. Pertamina Patra Niaga Integrated Terminal Makassar, PT. East West Seed Indonesia, PT. Bukit Asam Tbk, PT. Freeport Indonesia, PT. Ekosistem Khatulistiwa Lestari, PT. KPI Unit VI Balongan, PT. Pertamina Patra Niaga Fuel Terminal Parepare, PT. Polytama Propindo, and PT. Pertamina Geothermal Energy Area Ulubelu.

Main Outcomes Achieved

Binary Indicator 20.b Number of countries that have taken significant actions to strengthen capacity-building and development, enhance access to and transfer of technology, and promote innovation as well as technical and scientific cooperation.

20.1 Does your country have plans, policies, or instruments to address capacity-building and development needs related to biodiversity?

Partially

20.2 Does your country have measures to ensure the full and effective participation of Indigenous Peoples and Local Communities, women and girls, children and youth, and persons with disabilities in capacity-building and development for the conservation and sustainable use of biodiversity? (Select all that apply)

- Women and girls
- Children and youth
- Persons with disabilities
- Indigenous Peoples and Local Communities

20.3 Has your country conducted a national capacity self-assessment or other processes to assess capacity needs for biodiversity conservation and sustainable use?

No

20.4 Has your country conducted a national assessment of the capacity-building and development needs of Indigenous Peoples and Local Communities, women and girls, children and youth, and persons with disabilities for biodiversity conservation and sustainable use? (Select all that apply)

- Children and youth
- Women and girls
- Persons with disabilities
- Indigenous Peoples and Local Communities

20.5 Has your country established partnerships to promote joint technology development and collaborative scientific research programmes for biodiversity conservation and sustainable use, including efforts to strengthen scientific research and monitoring capacities through South–South, North–South, and triangular cooperation?

Fully

Comments

All regulations related to participation in biodiversity management apply inclusively to all citizens and do not introduce segregation in the context of Indigenous Peoples and Local Communities (referred to in Indonesia as Customary and Local Communities), women and girls, children and youth, and persons with disabilities. In the context of Customary and Local Communities, Indonesia has regulations and policies that guarantee rights and protection, including protection for environmental defenders.

National Indicator 13.a – Number of biodiversity-related innovations and technologies

The number of biodiversity-related innovations and technologies in Indonesia has shown a consistent upward trend between 2018 and 2024, as reflected in the increasing number of patent applications. Patent filings grew from 731 in 2018 to 1,326 in 2024, with a cumulative total of 7,235 patents during this period. In addition, approximately 380 Plant Variety Protection (PVT) certificates were issued between 2018 and 2024, covering local variety registrations, variety release certificates, and plant variety protection certificates. This trend indicates strengthened national innovation capacity and increasing research outputs related to biodiversity, genetic resources, and sustainable biological utilization (Figure 13.1).

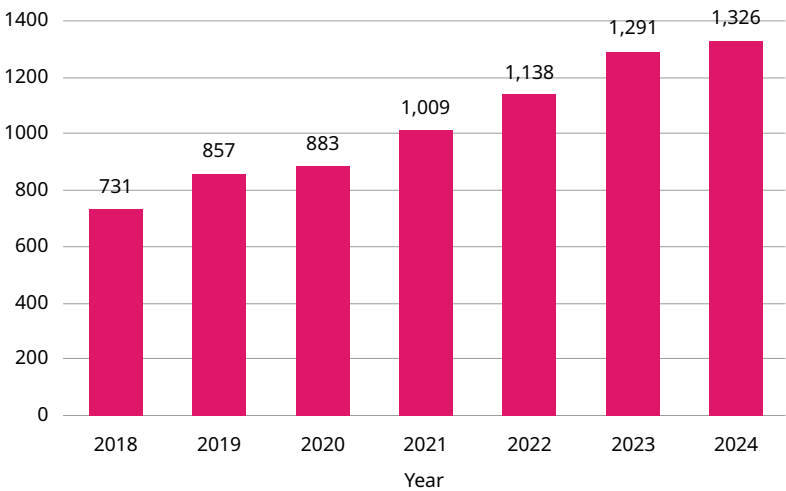


Figure 13.1. Number of Biodiversity-Related Patents (2018–2024)

Summary of key challenges encountered and different approaches that may be taken for further implementation

National Biodiversity Target 3 aims to ensure the protection and effective management of protected areas and high-biodiversity-value areas in terrestrial and aquatic ecosystems. This target is operationalized through the following six action groups under the IBSAP 2025–2045:

1. Science and Technology
The commercialization and application of research remain a significant challenge in ensuring the sustainability of research ecosystems and in maximizing the benefits of biodiversity-related research. Several challenges faced in the implementation of this target include limitations in research infrastructure, funding, which has changed significantly in terms of mechanisms and maximum funding levels, human resources, governance, public awareness, and field monitoring. Furthermore, the characterization of local varieties is still predominantly focused on morphological traits, with limited attention given to molecular, biochemical, or genetic aspects. This requires specific equipment that remains limited, particularly in remote areas. Moreover, the integration of biodiversity data into standardized platforms is minimal, and there is a lack of mandatory regulations, incentives, and best practices for environmental data disclosure
2. Infrastructure
Infrastructure limitations, especially in remote areas, include challenges related to funding for research station management, research facilities, and access to scientific collections. Furthermore, limited scientific knowledge and technical expertise, coupled with insufficient information on research

opportunities, continue to hinder progress. From a field monitoring perspective, the coverage of patrols through the SMART Patrol system across 579 conservation area units remains inadequate, particularly due to internet connectivity constraints and limited supporting computerized infrastructure.

3. Human Resource Capacity

The number of biodiversity researchers, particularly taxonomists and ecologists, in Indonesia remains relatively low compared to the country's biodiversity richness, especially for understudied species. This limitation affects research depth, species coverage, and the application of research outputs for conservation and sustainable use.

4. Institutional (Including Coordination)

In terms of governance, research agendas often do not align with regional development needs. Differences in priorities—such as regional agendas, private-sector profit orientation, and academic focus—pose challenges for the dissemination and application of science and technology (S&T). In addition, institutional formation processes are complex and time-consuming, further affecting coordination and implementation.

5. Financial

Funding limitations and unclear standards and regulations related to benefit-sharing remain significant obstacles. Changes in funding mechanisms and maximum funding allocations affect research continuity and the scaling up of biodiversity-related research and innovation.

6. Policy and Regulation

Intellectual Property (IP) protection and benefit-sharing mechanisms remain limited. While Indonesia has a relatively high number of patents, mechanisms for distributing benefits, particularly to local communities, require further attention. The registration and release process for local varieties is slow, and the economic utilization of these varieties has not yet been fully optimized.

7. Data

Public and regional awareness of the importance of genetic resources remains low. At the same time, SDG tracking at the regional level is still minimal, limiting the visibility and policy uptake of biodiversity-related research outcomes.

To address these challenges, a set of strategic measures is required. Research capacity needs to be strengthened through diversified funding sources, improved facilities, enhanced access to reference collections, and the integration of scientific collection data into standardized platforms. Capacity development for taxonomists particularly for underrepresented taxa should be prioritized, alongside deeper research on local varieties at the molecular, biochemical, and genetic levels. Monitoring and surveillance systems, including tools such as SMART Patrol, should be further strengthened by expanding their coverage and ensuring sustained, long-term monitoring.

Clearer regulatory frameworks and incentive mechanisms are needed to support the integration of environmental data disclosure into institutional strategies. Research agendas should be better aligned with regional development needs, while bureaucratic processes related to decision-making, permitting, and budgeting should be streamlined to enhance efficiency. Program sustainability can be ensured through long-term cooperation frameworks with clearly defined roles, funding commitments, and priorities, thereby avoiding an overreliance on short-term, project-based approaches.

In addition, awareness-raising activities and the simplification of institutional processes can improve public and local-level understanding of the value of genetic resources. Intellectual property mechanisms should also be strengthened through more equitable benefit-sharing arrangements, the expansion of plant variety

protection to key commodity crops, and stronger linkages between research outputs, policy formulation, and market applications. The economic potential of biodiversity through bioprospecting and industrial applications can be further explored, while maintaining a careful balance with ecosystem sustainability.

International and national cooperation should be institutionalized through more structured agreements, with clear allocation of roles, simplified bureaucratic procedures, predictable financing, and a strong focus on long-term sustainability. Such an integrated approach will not only address existing constraints but also reinforce the foundations for the long-term implementation of biodiversity targets

 Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Spatial Mapping of Biodiversity Distribution in Indonesia

Indonesia has conducted spatial mapping of biodiversity distribution, and several thematic maps related to this have been released by both the government and Non-State Actors (NSAs). The Ministry of Agriculture has published thematic maps, including maps of rubber commodity distribution and spatial maps for plantation commodities, which can be accessed on the [SiPeReDa](#) OPT platform - *Peta Sebaran Serangan OPT* (Pest Attack Distribution Map).

A disease distribution map for livestock and fish in Indonesia for the period 2023-2024 has been released by the Ministry of Agriculture (Kementan) and the National Research and Innovation Agency (BRIN) in the form of a publication. In 2024, a total of 1,328 from 1,709 cities/regencies were under surveillance from Strategic Animal Infectious Diseases based on the Minister of Agriculture Decree No 311/2023. Furthermore, the Ministry of Environment and Forestry has released an indicative map for cessation of business permits, forest area usage approvals, and approvals for changes in forest area designation in primary forests and peatland areas.

NSAs such as the Wildlife Conservation Society - Indonesia Program have also produced thematic maps, including population monitoring and distribution maps for species such as the Sumatran elephant, Sumatran tiger, gibbon, and hornbill (UDIK, SEUDATI, SIGER, SIBADAK), as well as for wild boar, anoa, and maleo (SIBONAWA).

Research development to strengthen Indonesia's biodiversity

The National Research and Innovation Agency (BRIN), as the central coordinating body for government research institutions, has established laboratories equipped with state-of-the-art facilities. These include a Structural Biology Laboratory featuring cryo-electron microscopy (cryo-EM); a Sequencing Laboratory equipped with PromethION (Oxford Nanopore Technologies) and NovaSeq (Illumina) platforms; and a Spectrometry Laboratory with Isotope Ratio Mass Spectrometry (IRMS) and Gas Chromatography–Mass Spectrometry (GC–MS) capabilities. (*E-Layanan Sains*)

To enhance human resource capacity, a three-year terrestrial biodiversity field research scheme has been developed in the form of a Terrestrial Biodiversity Expedition (E-Bite), with the aim of producing 60 newly trained taxonomic specialists at the Master's and Doctoral levels, improvement specimen collection up to 15,000, as well as increasing the discovery of at least 105 new species, particularly in Kalimantan. The dissemination will aim to be published in 60 articles.

Indicator Data

National Indicator 13.a. Number of biodiversity-related innovations and technologies

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
13.a. Number of biodiversity-related innovations and technologies	Intellectual Property Type	Biodiversity-based Product	2024	Patent	1326	
			2023	Patent	1291	
			2022	Patent	1138	
			2021	Patent	1009	
			2020	Patent	883	
			2019	Patent	857	
			2018	Patent	731	
		Plant Variety Protection	2024	Certificate	380	Cumulative 2018-2024, including registrations of local varieties, variety release certificates, and plant variety protection certificates.

National Biodiversity Target 14

Strengthening Capacity for Biosafety Management



 Main actions taken to implement the target

Implementation of National Biodiversity Target 14 focuses on strengthening capacity for biosafety management. Under the IBSAP 2025–2045, these efforts are organized into three action groups, as follows:

- 14.1 Strengthening institutional frameworks for biosafety management;
- 14.2 Enhancing biosafety management facilities; and
- 14.3 Utilization of modern biotechnology in accordance with biosafety principles.

 Summary of progress towards the target, including the main outcomes achieved

Indonesia’s institutional framework for biosafety management has been functioning effectively in a well-coordinated, cross-sectoral manner, supported by a strong legal foundation under [Government Regulation No. 21/2005](#) on the Biosafety of Genetically Engineered Products. This framework is further reinforced by several complementary regulations, including [Regulation of the Minister of Agriculture No. 35/2023](#) on the Monitoring and Control of Genetically Engineered Plant Varieties Circulating within the Territory of the Republic of Indonesia, and [Regulation of the National Agency of Drug and Food Control \(BPOM\) No. 21/2021](#) on the Assurance System for the Safety and Quality of Processed Food, which obliges business operators to implement food safety assurance systems. Additional technical regulations also support the implementation of biosafety measures for genetically engineered products.

The implementation of biosafety for genetically engineered products is facilitated by the Biosafety Commission for Genetically Engineered Products (*Komisi Keamanan Hayati Produk Rekayasa Genetik/KKH PRG*), whose membership comprises representatives from relevant technical ministries, as well as experts and specialists in biotechnology, environmental science, and public health. The Commission functions as a coordinating body providing technical recommendations and risk assessments through three Technical Teams on Biosafety for Genetically Engineered Products: the Food Safety Technical Team, the Feed Safety Technical Team, and the Environmental Safety Technical Team. Nonetheless, Indonesia’s pool of certified personnel for laboratory facility management remains limited, with only six individuals certified as of 2024.

With regard to certified laboratory facilities, the Ministry of Agriculture, through the Directorate General of Estate Crops, has maintained 30 certified laboratory units within its central technical implementing agencies during the period 2021–2025. In addition, 28 laboratories, including 14 veterinary laboratories under the Directorate General of Livestock and Animal Health Services and laboratories under the Indonesian Agency for Agricultural Assemblies and Modernization, have implemented biosafety measures and are accredited in accordance with ISO 17025 and ISO 17043 standards.

Between 2011 and March 2025, Indonesia received 36 applications for Plant Variety Protection (PVP) licenses. In addition to PVP mechanisms, Indonesia has also released genetically engineered plant varieties through Ministerial Decrees issued from 2001 to the most recent releases in 2021. These include the Nuctn 35b (Bollgard) GM cotton variety, the NXI 4T GM sugarcane variety, the Bio Granola GM potato variety released in 2021, four herbicide-tolerant maize varieties (NK 603 and GA 21) released in 2022, and four maize varieties with stacked traits conferring both herbicide tolerance and resistance to *Lepidoptera* pests.

Beyond plant varieties, Indonesia has released several livestock lines resulting from selective breeding. Five poultry lines, including chicken and duck lines, were released and licensed during 2012–2017: *Ayam KUB*, *Ayam KUB-1*, *Ayam Sensi-1 Agrinak*, *Ayam KUB Janaka*, and *Itik Master*. Meanwhile, a total of 42 bioprospecting-derived products have obtained patent protection to date, covering industrial, agricultural, and environmental biotechnology; bioactive and cosmetic products; food and health technologies; and other general categories (BRIN, 2024).

From 2014 to 2025, Indonesia demonstrated significant progress in biosafety implementation, issuing more than 140 biosafety certificates for various genetically engineered products (PRG). These recommendations span three primary categories: food safety, feed safety, and environmental safety, which constitute the core pillars of the national biosafety oversight system.

Data indicate a consistent upward trend over the years. During 2014–2018, approximately 30 genetically engineered products received biosafety certificates, primarily for commodities such as maize, soybean, and potato. This number increased during 2019–2021, with more than 50 additional certificates issued for agricultural commodities as well as genetically engineered veterinary medicinal products. In the period 2022–2023, a further 40–50 certificates were granted, reflecting the growing demand for biosafety assessments from the agricultural sector, biotechnology industries utilizing genetically engineered microorganisms, and the pharmaceutical sector. As of September 2025, over 20 additional recommendations have been issued, including for food, feed, and genetically engineered microorganisms used for industrial and environmental purposes.

Stakeholders contributing to the achievement of this target include the National Research and Innovation Agency (BRIN), the Ministry of Higher Education, Science, and Technology (Kemendiktisaintek), Indonesian Quarantine Agency (Barantin), the Ministry of Agriculture (Kementan), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Health (Kemenkes), and the National Agency of Drug and Food Control (BPOM), the National Professional Certification Agency (BNSP), the Professional Certification Body (LSP), private sectors and non-state actors.

Main Outcomes Achieved

Binary Indicator 17.b Number of countries that have taken action to implement biosafety measures as outlined in Article 8(g) of the Convention and measures for the handling of biotechnology and the equitable sharing of its benefits as set out in Article 19

17.1 Has your country established policy, legal, administrative, and other measures related to biosafety, as set out in Article 8(g) of the Convention?

Fully

17.2 Does your country implement biosafety measures in accordance with Article 8(g) of the Convention?

Fully

17.3 Has your country adopted legislative, administrative, or policy measures, as appropriate, to ensure the effective participation in biotechnological research activities by Parties—particularly developing countries—that provide genetic resources for such research, as outlined in paragraph 1 of Article 19 of the Convention?

Fully

17.4 Has your country taken practical measures to promote and advance priority access, on a fair and equitable basis, for Parties—especially developing countries—to the results and benefits arising from biotechnologies based on genetic resources provided by those Parties, as stated in paragraph 2 of Article 19 of the Convention?

No

17.5 Does your country conduct scientifically sound risk assessments regarding the use and release of living modified organisms?

Fully

17.6 Does your country provide access to biosafety-related information to support the safe transfer, handling, and use of living modified organisms?

Fully

National Indicator 14.a - Number of biotechnology applications derived from bioprospecting that are utilized

Bioprospecting activities in Indonesia have expanded significantly in line with the increasing utilization of genetic resources and biodiversity for the development of biotechnology-based products. Several bioprospecting outcomes from national research have obtained legal protection through patents and official licenses. A total of six biotechnology products derived from bioprospecting and bioengineering have been licensed for utilization, including: *Monascus purpureus* starter culture for citrinin-free fermented products (Patent IDP 000063665); co-culture of *Bacillus megaterium* and *Monascus purpureus* for low-citrinin fermented rice (Patent IDP 000049440); soil conditioner composition for critical land restoration (Patent IDP 000040604); *Bacillus* spp. and lactic acid bacteria-based probiotic formulations for shrimp aquaculture; urease enzyme production process from *Lysinibacillus xylanilyticus* INACC B347; and urease enzyme composition for soil stabilization in road pavement applications.

National Indicator 14.b - Number of genetically engineered products with biosafety certification

Between 2019 and 2025, the number of genetically engineered products receiving biosafety certification in Indonesia demonstrated a generally upward and increasingly diversified trend. Certifications have been granted across multiple categories, including food, feed, confined use, and environmental release. Food and feed certifications consistently represent a significant share of approvals, ranging from 4 to 12 per year, while certifications for environmental release indicate that regulatory oversight also extends to products intended for cultivation.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Indonesia continues to strengthen its national biosafety framework by progressively addressing a range of institutional, regulatory, financial, technological, and infrastructural challenges. Although existing legal instruments are spread across several sectoral regulations, the Government has been advancing efforts to develop a more coherent and integrated national framework. Ongoing harmonization across the agriculture, environment, health, and trade sectors is helping to ensure that biosafety measures are applied consistently and effectively throughout the country.

Institutionally, Indonesia is reinforcing coordination mechanisms within the Biosafety Commission for Genetically Engineered Products, enabling more efficient collaboration among ministries, scientific experts, and technical authorities. Efforts are also underway to reduce fragmentation of mandates and to expand biosafety oversight functions to subnational levels, ensuring that province and district-level authorities are increasingly able to support post-release monitoring.

In terms of financing, Indonesia continues to mobilize resources for biosafety research, environmental monitoring, and laboratory enhancement, while exploring more sustainable multi-year funding mechanisms to improve program continuity. These financial commitments are complemented by targeted capacity development initiatives. The Government is increasing the number of certified risk assessors and strengthening the capacities of local governments, researchers, inspectors, and technical personnel through ongoing training programs and knowledge-sharing activities.

Scientific and technological capabilities are being enhanced through the gradual expansion of molecular testing methods across laboratories and the strengthening of advanced risk assessment capacities, including those related to long-term ecological impacts, stacked traits, and emerging areas such as synthetic biology. Indonesia is also encouraging further research on post-release monitoring to strengthen the evidence base for long-term environmental safety.

Infrastructure development remains a priority, with continued investment in biosafety level 2 and 3 laboratory facilities and efforts to equip laboratories with more advanced detection and characterization tools. These improvements are complemented by progress in data management. Indonesia is working toward establishing a more integrated national data system for risk assessments, monitoring results, and product circulation, while also improving linkages with international platforms such as the Biosafety Clearing-House. Harmonization of data standards across sectors is being strengthened to support more effective coordination and informed decision-making.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

THE BIO GRANOLA POTATO

The Bio Granola potato represents one of Indonesia's notable best practices in the development and responsible application of modern biotechnology. Released by the Ministry of Agriculture in 2021 through Ministerial Decree No. 548/Kpts/SR.130/D/VII/2021, this genetically engineered Variety of Superior Seed (VUB) is the result of a cross between the Granola variety and the GE variety Katahdin SP951 (Figure 14.1). Its release followed a rigorous and precautionary biosafety process, including an environmental safety certificate issued by the Minister of Environment and Forestry in 2018 and a food safety certificate granted by the National Agency of Drug and Food Control (BPOM) in 2016.

Bio Granola potato developed to enhance both productivity and strong resistance to late blight (*Phytophthora infestans*). It delivers a high yield potential of 21.67–29.25 tons/ha, with an average production of 25.81 tons/ha, and reaches harvest maturity 100 days after planting. The adoption of this variety enables farmers to reduce fungicide spraying costs by approximately 50%, demonstrating how biotechnology can support sustainable agricultural practices while reducing chemical inputs.

As part of Indonesia's efforts to encourage responsible commercialization and equitable use of biotechnology innovations, a License Agreement for the Bio Granola potato variety was signed on 7 August 2024 between the Ministry of Agriculture (MoA) and PT. Hikmah Famili Rukun Mandiri (Figure 14.2). Under this agreement, MoA serves as the holder of the Plant Variety Protection (PVP) rights for Bio Granola, registered under Certificate No. 00724/PPVT/S/2024 dated 9 July 2024. PT. Hikmah Famili Rukun Mandiri, a company specializing in the production and marketing of agricultural seeds, is authorized to produce basic, foundation, and certified seed classes in accordance with Indonesian National Standards (*Standar Nasional Indonesia/SNI*).



Figure 14.1. Morphological Appearance of the Bio Granola GE VUB Potato (Center for Assembly and Modernization of Agricultural Biotechnology and Genetic Resources, Ministry of Agriculture)

The License Agreement aims to ensure that the Bio Granola variety is effectively utilized to support agricultural development and enhance community livelihoods. Through this agreement, the multiplication and commercial-scale production of Bio Granola serve as strategic instruments to increase national potato production in compliance with relevant laws and regulations. The agreement covers three main areas: (1) the designation of Bio Granola as the licensed variety, (2) the determination of royalty provisions, and (3) the procedures for its utilization through varietal production and multiplication. The technical implementation of these provisions is coordinated by MoA.

Under the terms of the agreement, PT. Hikmah Famili Rukun Mandiri is granted authority to multiply, produce, distribute, promote, and sell Bio Granola commercial seed domestically and/or for export purposes, covering basic seed (G0), foundation seed (G1), certified seed (G2), and certified seed 1 (G3). The use of these commercial seeds for producing table potatoes forms an integral part of commercialization activities and is treated as sales, except in cases of self-multiplication. MoA is entitled to receive a 1% royalty from the sale of Bio Granola seed and an annual report on varietal multiplication and commercialization activities. In addition, MoA retains the right to license the use of the Bio Granola variety to other parties for commercial purposes.

The development, biosafety evaluation, and responsible commercialization of the Bio Granola potato illustrate Indonesia's commitment to advancing modern biotechnology in a manner that upholds scientific rigor, ensures safety, and delivers tangible socio-economic benefits to farmers and communities. This example demonstrates how Indonesia integrates innovation with the precautionary approach to promote sustainable agricultural development and strengthen national food security.



Figure 14.2. Signing of the License Agreement between BSIP and PT. Hikmah Famili Rukun Mandiri (A), and the Bio Granola Potato Variety License Agreement Document (B)

Indicator Data

National Indicator 14.a. Number of biotechnology applications derived from bioprospecting that are utilized

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
14.a. Number of biotechnology applications derived from bioprospecting that are utilized	Legal Status	Licence	2026	Product	6	Cumulative, published in 2025

National Indicator 14.b. Number of genetically engineered products with biosafety certification

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
14.b. Number of genetically engineered products with biosafety certification	Intended Use	For Food	2025	Certificate	12	
		For Feed	2025	Certificate	5	
		Released to the Environment	2025	Certificate	21	
		For Food	2024	Certificate	12	
		For Feed	2024	Certificate	11	
		Released to the Environment	2024	Certificate	5	
		For Food	2023	Certificate	11	
		For Feed	2023	Certificate	8	
		Released to the Environment	203	Certificate	9	
		For Food	2022	Certificate	4	
	Research	For Feed	2022	Certificate	10	
		Released to the Environment	2022	Certificate	2	
		Confines Used	2022	Certificate	3	
		For Food	2021	Certificate	8	
		For Feed	2021	Certificate	12	
		Released to the Environment	2021	Certificate	3	
		For Food	2020	Certificate	10	
		For Feed	2020	Certificate	8	
		Released to the Environment	2020	Certificate	3	
		For Food	2019	Certificate	9	
		For Feed	2019	Certificate	4	
		Released to the Environment	2019	Certificate	7	

National Biodiversity Target 15

Strengthening Knowledge through the Integration of Biodiversity Data and Information



KMGBF GOAL D

Invest and Collaborate



KMGBF Target 21



Sustainable Development Goals



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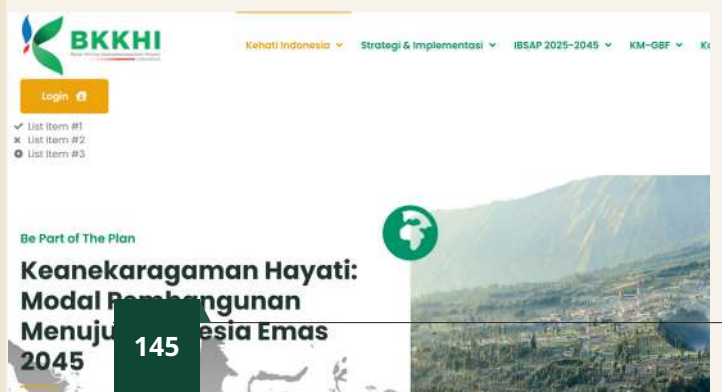
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Main actions taken to implement the target

Implementation of National Biodiversity Target 15 focuses on strengthening knowledge through the Integration of biodiversity data and information. Under the IBSAP 2025–2045, the implementation of this target is organized into four action groups, as follows:

- 15.1 Strengthening the Biodiversity Clearing-House Mechanism;
- 15.2 Enhancing Monitoring of the Implementation of Biodiversity Management Actions;
- 15.3 Increasing the Role of Citizen Science in Providing Biodiversity Data and Information; and
- 15.4 Strengthening the Capacity for Biodiversity Data and Information Management.



Summary of progress towards the target, including the main outcomes achieved

National Biodiversity Target 3 aims to ensure the protection and effective management of protected areas and high-biodiversity-value areas in terrestrial and aquatic ecosystems. This target is operationalized through the following six action groups under the IBSAP 2025–2045:

Data and information constitute a fundamental basis for the biodiversity management monitoring framework. The availability of integrated, interoperable, and transparent biodiversity data and information systems is essential to strengthen the knowledge base that underpins evidence-based biodiversity policy formulation, planning, implementation, monitoring, evaluation, and reporting at national and subnational levels.

Indonesia continues to strengthen national biodiversity knowledge management through the [Indonesia Biodiversity Clearing House Mechanism](#) or [Balai Kliring Keanekaragaman Hayati Indonesia/BKKHI](#). BKKHI serves as the central platform facilitating the exchange, management, and dissemination of biodiversity-related information, including data on identification, conservation, sustainable use, and the latest status and trends of biodiversity in Indonesia. The platform also supports national biodiversity monitoring and reporting processes, including reporting on the implementation of the Kunming–Montreal Global Biodiversity Framework (KMGBF) and other processes under the Convention on Biological Diversity (CBD).

BKKHI has received international recognition for its development and performance. During the 14th Meeting of the Conference of the Parties (COP 14) to the CBD in 2018, the Clearing-House Mechanism (CHM) Award Ceremony announced that Indonesia was awarded the Gold Award in the category of New National Clearing-House Mechanism. This recognition reflects Indonesia's commitment to strengthening transparent, accessible, and functional biodiversity knowledge management systems in support of national implementation and global biodiversity reporting.

BKKHI also functions as a public knowledge-sharing platform by publishing and disseminating information and updates related to biodiversity conservation and sustainable use, including information contributed through the BKKHI data node partner network. Published information generally covers developments in biodiversity conservation implementation, species and ecosystem management, research and monitoring results, policy and regulatory developments, partnerships and collaboration initiatives, biodiversity-related events and awareness activities, and progress in the implementation of national biodiversity strategies and action plans. These publications contribute to improving transparency, strengthening public awareness, and enhancing stakeholder engagement in biodiversity conservation.

In 2025, institutional restructuring and system transitions were undertaken following changes in ministerial structure and the designation of the National Focal Point for the Convention on Biological Diversity. As part of this process, the BKKHI system and server were migrated from the previous platform under the

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Ministry of Environment and Forestry to a new platform under the Ministry of Environment (KLH/BPLH). This transition period required system adjustment and data consolidation processes to ensure continuity of biodiversity information services. During this period, capacity-building activities on biodiversity data and information management continued to be implemented, and biodiversity information content continued to be produced, managed, and published.

Beyond the central role of BKKHI, biodiversity-relevant data and information in Indonesia are also supported by a range of sectoral and thematic data systems developed and operated by various ministries and institutions. These systems collectively contribute to the national biodiversity data landscape by providing data and information related to species, genetic resources, ecosystems, natural resource management, biosafety, and other biodiversity-related sectors. The availability of these complementary systems strengthens the overall biodiversity information base and supports biodiversity-related planning, monitoring, and reporting processes (Table 15.1).

Table 15.1. Key Biodiversity-Related Data and Information Systems in Indonesia

Category	System Name	Short Description	Managing Institution	Link
Clearing House Mechanism Biodiversity	Indonesia Biodiversity Clearing House Mechanism	National Biodiversity Clearing-House Mechanism portal for data exchange, information sharing, and CBD reporting.	Ministry of Environment	https://balaikliringkehati.kemenlh.go.id/
Biosafety & Biosecurity	Biosafety Clearing House Indonesia	National biosafety portal for information exchange on genetically engineered organisms.	Ministry of Environment	http://indonesiabch.kemenlh.go.id
Species Database & Scientific Collections	Makoyana	Biodiversity and taxonomy data system based on scientific research.	National Research and Innovation Agency	https://makoyana.brin.go.id
Biological Specimens & Scientific Collections	Specimen Data	Scientific biological specimen and museum collection data portal.	National Research and Innovation Agency	https://spesimen-data.brin.go.id
Genetic Resources & Biological Resources	SEKAR	Genetic and biological resource data system.	National Research and Innovation Agency	https://sekar.brin.go.id
Microorganism Culture Collection	Indonesian Culture Collection	National microorganism culture bank supporting research and innovation.	National Research and Innovation Agency	https://inacc.brin.go.id
Wildlife Health	Sehatsatli	Wildlife health information system supporting disease monitoring and emergency response (One Health).	Ministry of Forestry	https://sehatsatli.menlhk.go.id/app/
Species & Protected Area Conservation	SIDAK KSDAE	Monitoring and control system for conservation areas and biodiversity conservation activities.	Ministry of Forestry	https://sidak.ksdae.kehutan.go.id/login
Marine & Coastal Conservation	SIDAKO KKP	Marine conservation database system (MPAs, species, coastal ecosystems).	Ministry of Marine Affairs and Fisheries	https://sidako.kkp.go.id/sidako/index

Category	System Name	Short Description	Managing Institution	Link
Marine Protected Area Management	SEAPARK	Marine protected area and marine park management information system.	Ministry of Marine Affairs and Fisheries	https://seapark.kkp.go.id/
Marine Ecosystem Accounting	Ocean Accounts	Marine resource and coastal ecosystem accounting system based on SEEA.	Ministry of Marine Affairs and Fisheries	https://sidako.kkp.go.id/oceanaccounts/home
Integrated Marine and Fisheries Data	KKP Data Portal	National integrated marine and fisheries data portal.	Ministry of Marine Affairs and Fisheries	https://portaldata.kkp.go.id/
Integrated Forestry Data	One Data Sustainable Forest Management	Data integration and harmonization portal for sustainable forest management.	Ministry of Forestry	https://phl.kehutan.go.id/
Forest Cover & Carbon Monitoring	SIMONTANA	Satellite-based land cover, deforestation, and forest dynamics monitoring system.	Ministry of Forestry	https://play.google.com/store/apps/details?id=com.ptk.montana&hl=id
Forest & Land Fire Monitoring	SIPONGI	Spatial-based forest and land fire monitoring system for control and enforcement.	Ministry of Forestry	https://sipongi.gakkum.kehutan.go.id/
Forestry Licensing & Monitoring	SIGANISHUT	Forestry licensing and business activity monitoring system.	Ministry of Forestry	https://siganishut.phl.kehutan.go.id/
Forestry Activity Monitoring	SIGAP Forestry	Forestry activity monitoring and control system.	Ministry of Forestry	https://sigap.kehutan.go.id/
Social Forestry & Partnerships	GOKUPS	Social forestry enterprise group information system.	Ministry of Forestry	https://gokups.hutsos.kehutan.go.id/
Animal Health & Livestock	iSIKHNAS	National animal health information system (disease, population, livestock movement).	Ministry of Agriculture	https://isikhnas.pertanian.go.id/en
Livestock Identification & Registration	National Livestock Identification System	National livestock identification and registration system.	Ministry of Agriculture	https://identikpkh.com/#/login
Seeds & Genetic Resources (Plantations)	BaBeBun	Plantation seed and superior variety information system.	Ministry of Agriculture	https://babebun.ditjenbun.pertanian.go.id/
Integrated Agricultural Data	One Data Agriculture	National agriculture data integration and standardization portal.	Ministry of Agriculture	https://satudata.pertanian.go.id/
Environmental Licensing	Amdalnet	Digital environmental impact assessment and licensing system.	Ministry of Environment	https://amdalnet.kemenlh.go.id/dashboard_mr/login
Public Reporting & Participation	SIHUTANKU	Public reporting system related to forestry disturbances.	Ministry of Forestry	https://sihutanku.phl.kehutan.go.id/
Public Information Transparency	Forestry PPID Portal	Public information service portal for forestry sector.	Ministry of Forestry	https://ppid.webgiskemenhut.com/

Category	System Name	Short Description	Managing Institution	Link
Public Information Transparency	Agriculture PPID Portal	Public information service portal for agriculture sector.	Ministry of Agriculture	https://ppid.pertanian.go.id/
Public Health & Zoonosis	SKDR	Early warning and response system for infectious diseases (including zoonoses).	Ministry of Health	https://surveilans.kemkes.go.id/tentang
Agricultural Administration & Services	SITAMPAN	Agriculture service and administration system.	Ministry of Agriculture	https://sitampan.pertanian.go.id/

Non-State Actors (NSAs) contribute to National Target 15 by supporting the generation, documentation, integration, and dissemination of biodiversity data and information. Their contributions include the development of information platforms and databases, community-based mapping and registration of customary and conserved areas, citizen science initiatives, conservation publications, and capacity-building programs for data management and law enforcement. Private sector entities further contribute through biodiversity monitoring, research collaboration, data sharing with authorities, and integration of biodiversity information into management plans and sustainability reporting.

Several citizen science platforms and initiatives contribute to biodiversity data and information availability in Indonesia, including [Burungnesia](#), [Kupunesia](#), [Amati Sangkar](#), [Amaturalist](#), and [the Asian Waterbird Census](#). Participation data indicate increasing public contribution to biodiversity monitoring. The Asian Waterbird Census, coordinated by Yayasan Lahan Basah, recorded participation ranging from 335 contributors in 2018 to 682 contributors in 2023. Burungnesia has recorded more than 4,000 registered users, with thousands of active data contributors, covering tens of thousands of observation locations and generating millions of biodiversity observation records. As of 2025, community initiatives such as [Biodiversity Warriors](#) have engaged more than 6,000 members, while multi-taxa observation platforms such as Amaturalist have recorded participation from several thousand contributors. Similarly, Kupunesia continues to support biodiversity observation through checklist data, species documentation, and knowledge updates. These initiatives collectively contribute to strengthening biodiversity data availability and supporting biodiversity monitoring efforts in Indonesia.

The relevant stakeholders contribute to the achievement of this target, including the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of National Development Planning/National Development Planning Agency (Bappenas), the National Research and Innovation Agency (BRIN), the Indonesian Quarantine Agency (Barantin), Local Governments (Provincial and City/Regency), private sectors, and non-state actors such as Burung Indonesia, Yayasan Lahan Basah Indonesia, Yayasan Bioindikator Indonesia, Working Group ICCAs Indonesia, UNDP Indonesia, Burungnesia, Kupunesia, Amaturalist, Biodiversity Warriors, Yayasan Kehati, Belantara Foundation, Yayasan Sintas, Konservasi Indonesia, Tambora Muda, Yayasan Borneo Nature Indonesia, Flora Fauna Indonesia, the Society for Conservation Biology Indonesia, Forum HarimauKita, Tambora Muda, Bogor Nature and Wildlife Photography, and PILI Green Network.

Private Sectors contributing to this target such as PT. Solusi Bangun Indonesia Tbk, PT. Bukit Asam, Tbk, PT. Ekosistem Khatulistiwa Lestari, PT. Pertamina Geothermal Energy Area Ulubelu, PT. Avian Avian Tbk, PT. Restorasi Ekosistem Indonesia, PT. Bambu Nusa Verde, PT. Restorasi Habitat Orangutan Indonesia, PT. Bayer Indonesia, PT. Pertamina Patra Niaga Integrated Terminal Semarang, PT. Pertamina Patra Niaga AFT Ahmad Yani, PT. Rimba Makmur Utama, PT. Pembangunan Jaya Ancol Tbk, PT. Aneka Tambang Tbk UBPE Pongkor, PT. Astra Agro Lestari Tbk, PT. Kilang Pertamina Internasional RU II Production Sungai Pakning, PT. Pertamina Patra Niaga AFT BIL, PT. Sipef Biodiversity Indonesia, CropLife Indonesia, PT. Kilang Pertamina

Internasional RU II Dumai, PT. Rimba Raya Conservation, PT. Kinga Pertamina Internasional RU IV Cilacap, PT. PGE Tbk Area Kamojang, PT. PLN (Persero), PT. KPI Unit VI Balongan, PT. Polytama Propindo, PT. Kilang Pertamina Internasional RU III, PT. Pertamina Patra Niaga AFT Adi Sumarmo, PT. Pertamina Patra Niaga Integrated Terminal, PT. Pertamina Patra Niaga Fuel Terminal Parepare, PT. Pertamina Patra Niaga- AFT Supadio, PT. East West Seed Indonesia, PT. Bukit Asam Tbk, PT. Freeport Indonesia, PT. Bio Farma (Persero), PT. Indonesia Asahan Aluminium.

Main Outcomes Achieved

Headline Indicator 21.1 - Indicator on biodiversity information for monitoring the global biodiversity framework

The national assessment shows that biodiversity information is available for a substantial proportion of KMGBF headline indicators. A total of 12 headline indicators were assessed as having biodiversity information available, supported by existing monitoring schemes and primary biodiversity data. An additional 12 headline indicators were assessed as having partial biodiversity information availability, where monitoring schemes and/or primary data exist but remain limited in coverage or consistency. Three headline indicators, Percentage of the population in traditional occupations, Land-use change and land tenure in the traditional territories of indigenous peoples and local communities, and Value of subsidies and other incentives harmful to biodiversity, were assessed as not currently having biodiversity information available. This reflects that these headline indicators are not included within the current scope of the national biodiversity monitoring and reporting framework.

National Indicator 15.a - Number of nodes integrated into the Clearing House Mechanism (BKKHI) system

Progress in the integration of data nodes into the BKKHI system continues through strengthening institutional collaboration and expanding partnerships with data and information providers. In 2025, despite ongoing institutional restructuring and system transition following changes in ministerial structure and the designation of the National Focal Point for the Convention on Biological Diversity, efforts to strengthen the BKKHI network continued.

As part of strengthening multi-stakeholder participation in biodiversity data and information exchange, new Memoranda of Understanding (MoUs) were signed in 2025 with several non-state actors, including Burung Indonesia, Yayasan Lahan Basah Indonesia, Yayasan Bioindikator Indonesia, and Working Group ICCAs Indonesia. These partnerships support the integration and contribution of biodiversity data and information to the national biodiversity information ecosystem, supporting data availability, improving knowledge sharing, and enhancing the functionality of the national Clearing House Mechanism.

Summary of key challenges encountered and different approaches that may be taken for further implementation

1. Infrastructure
- Technical and administrative hurdles continue to affect the functionality of national biodiversity information systems. For example, the BKKHI website experienced access disruptions due to domain migration following ministerial restructuring, which temporarily hampered its role as a central information gateway. More broadly, uneven access to information technology infrastructure, particularly at the regional level, limits the effectiveness of data collection, verification, processing, and analysis, and constrains connectivity between central and subnational institutions.

2. Data
- Biodiversity data remain fragmented across institutions and sectors. Data are distributed among multiple ministries and agencies, often using different methodologies, formats, and classification standards, which hampers integration and interoperability between systems. In addition, the absence of a nationally connected data system linking central and regional agencies contributes to slow data updates and limits the usability of biodiversity information for policy planning and decision-making. Regulatory and standardization gaps further constrain data management. Existing regulations on biodiversity data openness and protection do not yet fully support information exchange across institutions or public access to scientific data. There is also no national standard governing data security, data ownership, or mechanisms for acknowledging individuals, institutions, or communities contributing to biodiversity data collection and management.
3. Human Resource Capacity
- Technical capacity at the regional level remains limited. Human resource constraints are evident in the low number of taxonomic experts and biodiversity specialists, particularly those involved in species inventories and the identification of endemic or rare species. These limitations affect data quality, slow the updating of national biodiversity databases, and reduce the effectiveness of evidence-based decision-making.
4. Policy and Regulation
- Mechanisms for the protection of traditional knowledge and genetic resources require further strengthening. In contexts involving traditional knowledge and genetic resources, frameworks for intellectual property protection and the implementation of Free, Prior, and Informed Consent (FPIC) are not yet fully operational, creating challenges in ensuring that data are used ethically and fairly.
5. Institutional (Including Coordination)
- The integration of indigenous and local knowledge into national biodiversity information systems remains limited. Although such knowledge holds significant value for conservation and sustainable use, it is rarely documented and infrequently incorporated into formal data systems, reflecting broader coordination challenges between national institutions and local knowledge holders.
6. Financial
- Developing and maintaining an integrated national biodiversity data system requires sustained, long-term investment. However, budget support remains limited, and coordination of donor assistance across agencies is still insufficient, constraining efforts to strengthen data systems, infrastructure, and capacity over time.

- Approaches for Further Implementation of Biodiversity Data Integration and Mainstreaming in Indonesia
1. Strengthen Interoperability Protocols. Establish mandatory technical standards and data exchange protocols for all biodiversity data nodes to ensure seamless integration into the Biodiversity Knowledge and Information System (BKKHI). Synchronize metadata, standardize formats, and enable interoperability across all databases.
2. Sustainable Budget Allocation. Allocate budgets not only for system development but also for long-term maintenance, updates, and operationalization. Ensure multi-year funding for infrastructure, technical support, and human capacity development.
3. Enhance Engagement of Nodal Partners. Actively involve regional governments, universities, NGOs, and other stakeholders to enrich BKKHI data. Strengthen collaborative programs for data collection, validation, and sharing.

4. Establish and Strengthen the “One National Biodiversity Data” System. Integrate biodiversity data from multiple sectors in accordance with One Data Indonesia Policy (Perpres No. 39/2019) and One Map Indonesia (Perpres No. 9/2016). This approach ensures metadata synchronization, standardized data formats, and interoperability across platforms.
5. Enhance Technical Capacity and Digital Infrastructure. Build the technical skills of human resources at central and regional levels through training, digitalization, and cloud- and geospatial-based biodiversity data centers. Collaborate with BRIN and universities for data analysis and scientific validation.
6. Develop an Inclusive and Interactive Biodiversity Clearing House Mechanism (CHM). CHM portals serve as national information hubs providing biodiversity data, national and global status reports, policies or policy recommendations, and open-access research results for the public, researchers, and policymakers.
7. Promote Multi-Stakeholder Collaboration. Foster partnerships among government, universities, research institutions, NGOs, private sectors, and local communities, including citizen science initiatives. Strengthen data-sharing agreements and data acknowledgment policies to ensure data security, recognize contributions, and provide appropriate public access for evidence-based research and policymaking.
8. Integrate Local and Indigenous Knowledge. Involve local communities in field data collection and documentation of traditional knowledge based on Free, Prior and Informed Consent (FPIC) principles to enrich the national biodiversity knowledge base.
9. Digitalization and Innovative Technologies. Leverage innovative technologies such as remote sensing, AI for species identification, and citizen science apps (e.g., Burungnesia, iNaturalist-ID, Pl@ntNet). Develop blockchain-based systems for traceability of genetic resources (e.g., seeds, plants, microorganisms), ensuring transparent, permanent, and decentralized digital recording of all transactions and information.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

Burungnesia & iNaturalist-ID

Citizen science applications such as Burungnesia and iNaturalist-ID have significantly increased public participation in biodiversity data collection. As of 2024, Burungnesia has recorded more than 2 million bird observations from approximately 30,000 users across Indonesia, while iNaturalist-ID has documented more than 450,000 species observations.

These datasets have been utilized by the Ministry of Environment and Forestry (KLHK), the National Research and Innovation Agency (BRIN), and BirdLife Indonesia to update national bird species distribution maps and to support the identification of High Biodiversity Value Areas (HBVA) based on the distribution of plant and wildlife species. Community-based approaches supported by digital technology have proven effective in expanding both the spatial and temporal coverage of biodiversity data, particularly in areas where scientific surveys are limited.

Burungnesia has played an important role in accelerating data collection by hundreds of bird observers across Indonesia. This Android-based application facilitates field data recording and direct submission to a national-level database. The application was developed voluntarily by the Indonesian birdwatching community in 2015. By 2020, Burungnesia had more than 5,000 active users from Sumatra to Papua and had compiled over 50,000 bird observation records over the previous five years. These data were subsequently compiled into the Atlas of Indonesian Birds (2020), which presents distribution information for 739 bird species out of the approximately 1,771 bird species recorded in Indonesia.

In addition to broadening public participation, Burungnesia data have become one of the sources supporting the SIDAK database, which is analyzed and utilized in the participatory development of areas with high biodiversity value by the Directorate General of Natural Resources and Ecosystem Conservation (Ditjen KSDAE, KLHK). This process includes terrestrial mapping covering approximately 90 million ha identified as high biodiversity value areas, as well as spatial mapping by functional forest categories, including conservation forests, production forests, and protection forests.

Indicator Data

Headline Indicator 21.1 Indicator on biodiversity information for monitoring the Kunming-Montreal Global Biodiversity Framework

Use national data set

Indicator	Year	Unit	Value	Footnote
21.1 Indicator on biodiversity information for monitoring the Kunming-Montreal Global Biodiversity Framework	2025	Number of data/information available to use for the KMGBF headline indicator achievement	61	

Note: Based on national assessment where both fully available and partially available biodiversity information are considered as contributing to KMGBF headline indicator monitoring.

National Indicator 15.a Number of nodes integrated into the Clearing House Mechanism (BKKHI) system

- No data available
- BKKHI is undergoing institutional transition in its management arrangements, systems, and servers from the former Ministry of Environment and Forestry to the Ministry of Environment following the ministerial restructuring and changes in the designation of the National Focal Point for the Convention on Biological Diversity. In 2025, new Memoranda of Understanding (MoUs) were signed with several non-state actors (NSAs), including Burung Indonesia, Yayasan Lahan Basah Indonesia, Yayasan Bioindikator Indonesia, and Working Group ICCAs Indonesia, to strengthen collaboration in biodiversity data and information sharing.

National Biodiversity Target 16

Mainstreaming Biodiversity into National Development



 Main actions taken to implement the target

Implementation of National Biodiversity Target 16 focuses on mainstreaming biodiversity into national development. Under the IBSAP 2025–2045, the implementation of this target is organized into five action groups, as follows:

- 16.1 Enhancing education and knowledge on biodiversity through formal and non-formal education;
- 16.2 Strengthening Communication, Education, and Public Awareness (CEPA) related to biodiversity;
- 16.3 Formulating planning and implementing biodiversity management at the national level;
- 16.4 Formulating planning and implementing biodiversity management at the provincial, district/ municipal, and village levels; and
- 16.5 Developing a biodiversity economic accounting system to measure the monetary and non-monetary impacts of biodiversity

 Summary of progress towards the target, including the main outcomes achieved

Indonesia has established a coherent legal, policy, and institutional framework to mainstream biodiversity across national and sub-national development planning processes. Recognizing that biodiversity underpins economic resilience, food security, climate adaptation, and ecosystem stability, Indonesia has positioned biodiversity integration as a strategic component of sustainable development under the IBSAP 2025–2045 framework.

A strong legal foundation underpins biodiversity mainstreaming efforts. [Presidential Instruction No. 1/2023](#) on Mainstreaming Biodiversity in Sustainable Development mandates ministries, government agencies and local governments (provinces and regencies/cities) to integrate biodiversity considerations into development planning, budgeting, implementation, and evaluation. This instruction reinforces sectoral regulations and aligns biodiversity priorities with the National Long-Term Development Plan (*Rencana Pembangunan Jangka Panjang Nasional/RPJPN*) 2025–2045 and the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah/RPJMN*) 2025–2029.

The adoption of the Indonesia Biodiversity Strategy and Action Plan (IBSAP) 2025–2045 represents a strategic milestone in institutionalizing biodiversity across governance levels. IBSAP aligns national targets with the Convention on Biological Diversity (CBD) and the Kunming–Montreal Global Biodiversity Framework (KMGBF), ensuring coherence between global commitments and domestic development agendas. Through guidance issued by the Ministry of National Development Planning/National Development Planning Agency (Bappenas), sub-national governments are encouraged to integrate IBSAP priorities into their Regional Medium-Term Development Plans (*Rencana Pembangunan Jangka Menengah Daerah/RPJMD*).

Communication, Education, and Public Awareness (CEPA) efforts have been expanded systematically. Annual environmental status reports, forestry statistics, environmental quality index analyses, and forest condition reports are published regularly. Hundreds of digital uploads, including press releases, policy documents, and performance reports, are disseminated annually through official platforms. These initiatives enhance transparency, public engagement, and evidence-based dialogue, although systematic measurement of behavioral impact remains limited.

Non-State Actors (NSAs), including civil society organizations, youth networks, research institutions, and community groups, contribute to National Biodiversity Target 16 by strengthening biodiversity mainstreaming through education, awareness, and capacity development. Their efforts include biodiversity outreach to schools and local communities, public campaigns on human–wildlife coexistence, youth

engagement programs, citizen science initiatives, and the development of educational materials and digital knowledge platforms. NSAs also support technical capacity building for conservation practitioners and local stakeholders through training on biodiversity monitoring, law enforcement support, species management, and community-based conservation approaches.

Private sectors contribute by integrating biodiversity considerations into corporate sustainability strategies, environmental education programs, and community outreach activities. Through corporate social responsibility (CSR) initiatives, routine awareness campaigns, restoration activities, and partnerships with government and civil society, companies promote responsible natural resource management and support biodiversity conservation at operational and landscape levels.

Stakeholders contributing to achievement of this target are the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of National Development Planning/National Development Planning Agency (Bappenas), the Ministry of Finance (Kemenkeu), the National Research and Innovation Agency (BRIN), the Ministry of Higher Education, Science, and Technology (Kemendikisaintek), the Ministry of Primary and Secondary Education (Kemendikdasmen), Indonesian Quarantine Agency (Barantin), the Ministry of Home Affairs (Kemendagri), the Ministry of Religious Affairs (Kemenag), The Ministry of Villages and Development of Disadvantaged Regions (Kemendesa PDT), Statistics Indonesia (BPS), the National Standardization Agency of Indonesia (BSN), the Indonesian National Police (POLRI), the Indonesian National Armed Forces (TNI), the Attorney General's Office of the Republic of Indonesia (Kejaksaan RI), the Supreme Court (Mahkamah Agung), the Local Governments (Provincial and City/Regency), and non-state actors such as Earth Devotion, Forum Konservasi Orangutan Indonesia, Forum Konservasi Gajah Indonesia, Forum Pohon Langka Indonesia, Gabungan Pengusaha Kelapa Sawit Indonesia, Global Youth Biodiversity Network - Chapter Indonesia, IUCN SSC Indonesia Species Specialist Group, Yayasan Madani Berkelanjutan, Konservasi Indonesia, Belantara Foundation, CropLife Indonesia, KupuKita, Yayasan SINTAS Indonesia, Tambora Muda, Wildlife Conservation Society - Indonesia Program, Yayasan Lahan Basah, Yayasan Sahabat Bekantan Indonesia, Yayasan Inisiasi Alam Rehabilitasi Indonesia, Biodiversity Warriors, Working Group ICCAs Indonesia, Yayasan Kehati, Badan Registrasi Wilayah Adat, Forum HarimauKita, Perkumpulan Sawit Watch, Fauna & Flora Indonesia, PT. ANTAM Tbk UBPB Kalimantan Barat, PT. Astra Agro Lestari Tbk, PT. Avia Avian Tbk, PT. BAMBU NUSA VERDE, PT. Bayer Indonesia, PT. Bio Farma (Persero), PT. Bukit Asam, Tbk, PT. East West Seed Indonesia, PT. Ekosistem Khatulistiwa Lestari, PT. Freeport Indonesia, PT. Indonesia Asahan Aluminium, PT. Kilang Pertamina Internasional RU II Dumai, PT. Kilang Pertamina Internasional RU II Production Sungai Pakning, PT. Kilang Pertamina Internasional RU III, PT. Kilang Pertamina Internasional RU IV Cilacap, PT. KPI Unit VI Balongan, PT. Mitra Kiara Indonesia, PT. Pembangunan Jaya Ancol Tbk, PT. Pertamina Geothermal Energy Area Ulubelu, PT. Pertamina Patra Niaga - AFT Supadio, PT. Pertamina Patra Niaga AFT Adi Sumarmo, PT. Pertamina Patra Niaga AFT BIL, PT. Pertamina Patra Niaga Fuel Terminal Parepare, PT. Pertamina Patra Niaga Integrated Terminal, PT. Pertamina Patra Niaga Integrated Terminal Makassar, PT. Pertamina Patra Niaga Integrated Terminal Semarang, PT. PGE Tbk Area Kamojang, PT. PLN (Persero), PT. Polytama Propindo, PT. Pupuk Sriwidjaja Palembang, PT. Restorasi Ekosistem Indonesia, PT. Restorasi Habitat Orangutan Indonesia, PT. Rimba Makmur Utama, PT. Rimba Raya Conservation, PT. Semen Indonesia Tbk, PT. Sipef Biodiversity Indonesia, PT. Solusi Bangun Indonesia Tbk.

Main Outcomes Achieved

National Indicator 16.a – Number of ministries/agencies that have integrated the IBSAP into planning documents

Based on the Indicative List of Biodiversity Detailed Output (*Rincian Output/RO*) Tagging for Fiscal Year 2025 issued by the Ministry of National Development Planning/National Development Planning Agency (Bappenas), a total of 21 ministries and agencies have formally integrated biodiversity considerations into their planning and budgeting frameworks, as reflected in the tagging of biodiversity-related Detailed Outputs within their sectoral programs.

National Indicator 16.b – Number of local governments (provincial and regency/city) that have integrated the IBSAP into planning documents

Based on cumulative data from regional biodiversity management inventories, at least 30 regency/city governments have developed Biodiversity Management Master Plans (*Rencana Induk Pengelolaan Keanekaragaman Hayati/RIP Kehati*). These RIP Kehati serve as guiding documents for incorporating biodiversity priorities into regional development planning, spatial planning, and sectoral programmes. While this represents measurable progress in biodiversity mainstreaming at the local level, broader coverage and strengthened implementation mechanisms are still needed to ensure systematic integration across all regions nationwide.

National Indicator 16.c – Proportion of local governments with a Local Biodiversity Management Index of at least 0.5

Data for this indicator are not yet available, as the Local Biodiversity Management Index methodology is still under development and has not yet been operationalized at the national level.

National Indicator 16.d – Number of non-government actors that have integrated the IBSAP into planning documents

Data for this indicator are not yet available. The reporting mechanism is currently awaiting formal submissions of commitments from non-government actors under the IBSAP 2025–2045 and the Kunming–Montreal Global Biodiversity Framework (KMGBF).

Summary of key challenges encountered and different approaches that may be taken for further implementation

The integration of biodiversity into policies and development planning continues to face several challenges. These include varying levels of awareness and understanding among stakeholders regarding the strategic importance of biodiversity, fragmented scientific data and information systems that may constrain evidence-based decision-making, development pressures that require careful balancing between economic growth and environmental sustainability, and institutional as well as financial capacity limitations in certain sectors and regions that affect effective implementation. As IBSAP 2025–2045 has only recently been adopted, further efforts are needed to ensure its systematic translation into sectoral and sub-national planning instruments.

Mainstreaming biodiversity, as articulated in IBSAP 2025–2045, extends beyond species and habitat conservation. It requires embedding biodiversity considerations into national and regional development policies, investment planning, spatial planning, and budgeting processes. The objective is to ensure that biodiversity is recognized as a foundational asset for sustainable development, supporting economic resilience, social well-being, and environmental sustainability, while aligning with the Sustainable Development Goals and the Kunming–Montreal Global Biodiversity Framework.

To strengthen implementation of IBSAP and biodiversity mainstreaming more broadly, Indonesia is advancing several strategic approaches. These include enhancing cross-sector integration through planning and budgeting mechanisms such as biodiversity-related output tagging; strengthening the use of scientific data, ecosystem mapping, and economic instruments including ecosystem service valuation; reinforcing institutional coordination and capacity-building across governance levels; expanding Communication, Education, and Public Awareness (CEPA) initiatives; and promoting community-based natural resource management to ensure that biodiversity conservation contributes to inclusive socio-economic development.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

These cases collectively show that mainstreaming biodiversity is effective when policy, community participation, and monitoring tools are integrated into sectoral and regional planning.

Mangrove Restoration and Coastal Management

Case: Large-scale mangrove rehabilitation projects in North Sumatra, West Java, and Kalimantan.

Effectiveness: Restored mangrove areas increased fishery productivity, strengthened coastal protection against floods and storm surges, and enhanced carbon sequestration.

Impact on Biodiversity Mainstreaming: Demonstrates integration of ecosystem conservation into coastal development and disaster risk reduction policies, supporting SDGs 13 (Climate Action) and 14 (Life Below Water).

Community-Based Forest Management (CBFM)

Case: Central Kalimantan and Papua programs empowering local communities to sustainably manage forests.

Effectiveness: Reduced illegal logging, conserved habitats for endangered species such as orangutans, and provided sustainable livelihood opportunities through non-timber forest products.

Impact on Biodiversity Mainstreaming: Integrates conservation into local economic development and social planning, aligning biodiversity with sustainable development goals.

Marine Protected Areas (MPAs)

Case: MPAs established in Raja Ampat and Wakatobi, combining stakeholder engagement with strict ecosystem protection

Effectiveness: Coral reef coverage and fish stocks increased; local fisheries and tourism benefitted; resilience to climate change impacts improved.

Impact on Biodiversity Mainstreaming: Shows incorporation of marine biodiversity conservation into spatial and economic planning.

Integration into National Development Plans (RPJMN & RPJPN)

Case: Biodiversity considerations incorporated into spatial planning, agriculture, water resources, and energy sector planning.

Effectiveness: Development projects increasingly account for ecosystem services, reducing habitat loss and maintaining ecological functions.

Impact on Biodiversity Mainstreaming: Ensures national economic and infrastructure development aligns with biodiversity conservation.

Growing the Next Stewards and Capacity in Biodiversity Governance

Recognizing that meaningful youth participation in biodiversity governance needs more than short-term engagement, GYBN Indonesia started the Youth Biodiversity Squad (YouBisa) as a structured capacity-building and regeneration program. YouBisa was designed to prepare young people to contribute to biodiversity action and gradually take on coordination and leadership roles within the youth movement.

The first batch of YouBisa ran for six months (October 2023–March 2024). From 11 applicants, four young people were selected based on their alignment with GYBN Indonesia’s values and commitment to learning. Participants joined the program at different stages, some still studying, others starting their professional lives, and they grew with the organization through training, mentorship, and hands-on involvement.

As a youth-led network engaging with biodiversity policy, GYBN Indonesia emphasised capacity-building beyond technical knowledge. Participants learned about systems thinking, awareness-based system change, and the structure of Multilateral Environmental Agreements (MEAs), including the Convention on Biological Diversity and other Rio Conventions. This process helped participants see biodiversity as part of interconnected social, political, and ethical systems, while reflecting on their own motivations and roles as young actors.

A key outcome of YouBisa is its long-term impact. Three participants stayed engaged with GYBN Indonesia over several years, moving from students to graduates and professionals, and continuing to contribute to the organization. All three participants from the first batch now serve as national coordinators, showing a clear path of succession and leadership development. This highlights the importance of sustained mentorship, time investment, and trust in supporting young people’s growth.

The program also raised a broader point: youth leadership development cannot rely only on peer-based learning. Intergenerational mentorship from decision-makers, institutions, and senior practitioners is critical for continuity, institutional memory, and meaningful participation. In this way, YouBisa shows that investing in youth capacity is a shared responsibility across generations.

YouBisa shows how youth capacity-building can be a long-term, mentorship-based process rather than a one-off training. The program contributes to KM GBF Target 20, 21, 22 on capacity development and supports National Target 16 stated IBSAP objectives on communication, education, and youth engagement by strengthening young people’s readiness to participate in biodiversity governance and policy.

[Biodiversity Mainstreaming - GYBN](#)
[Welcoming Session with GYBN Southeast Asia](#)

 Indicator Data

Binary Indicator 14.b Number of countries integrating biodiversity and its multiple values into policies, regulations, planning, development processes, poverty eradication strategies, and, where appropriate, national accounts, across all levels of government and sectors, while progressively aligning relevant public and private activities, as well as fiscal and financial flows, with the goals and targets of the Framework

14.1 Does your country integrate biodiversity and its multiple values into policies, regulations, planning processes, development strategies, and poverty eradication efforts across all levels of government?

Fully

14.2 Does your country apply environmental economic accounting to quantify both the monetary and non-monetary values of biodiversity?

Partially

14.3 Does your country integrate biodiversity and its multiple values into policies, regulations, plans, and strategies across all sectors to ensure effective mainstreaming?

Fully

14.4 Does your country have policies, regulations, strategies, or plans in place to progressively align all relevant public and private activities with the goals and targets of the Framework?

Partially

14.5 Are there policies, regulations, strategies, or plans in place to progressively align fiscal and financial flows with the goals and targets of the Framework?

Partially

National Indicator 16.a. Number of ministries/agencies that have integrated the IBSAP into planning documents

Use national data set

Indicator	Year	Unit	Value	Footnote
16.a. Number of ministries/agencies that have integrated the IBSAP into planning documents	2025	Number of Ministries/Agencies	21	

National Indicator 16.b. Number of local governments (provincial and regency/city) that have integrated the IBSAP into planning documents

Use national data set

Indicator	Year	Unit	Value	Footnote
16.b. Number of local governments (provincial and regency/city) that have integrated the IBSAP into planning documents	2025	Number of Regencies/Cities	30	Cumulative Based on The Regency/City Biodiversity Management Master Plans

National Indicator 16.c. Proportion of local governments with a Local Biodiversity Management Index of at least 0.5

- *No data available*
- A long-term indicator

National Indicator 16.d. Number of non-government actors that have integrated the IBSAP into planning documents

- *No data available*
- Data are not yet available, as submissions of commitments from non-state actors related to the IBSAP 2025–2045 and the KMGBF are still in progress.

Inclusive Participation and Representation of Communities in Biodiversity Management



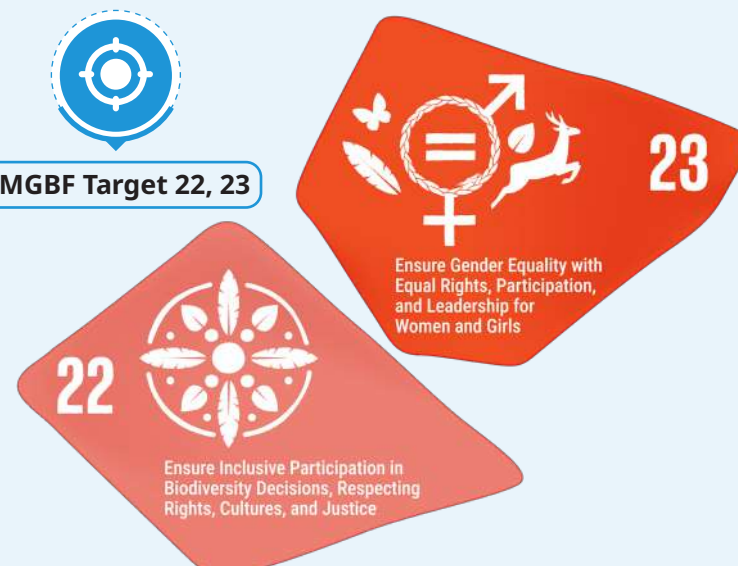
KMGFB GOAL D

Invest and Collaborate

Sustainable Development Goals



KMGFB Target 22, 23

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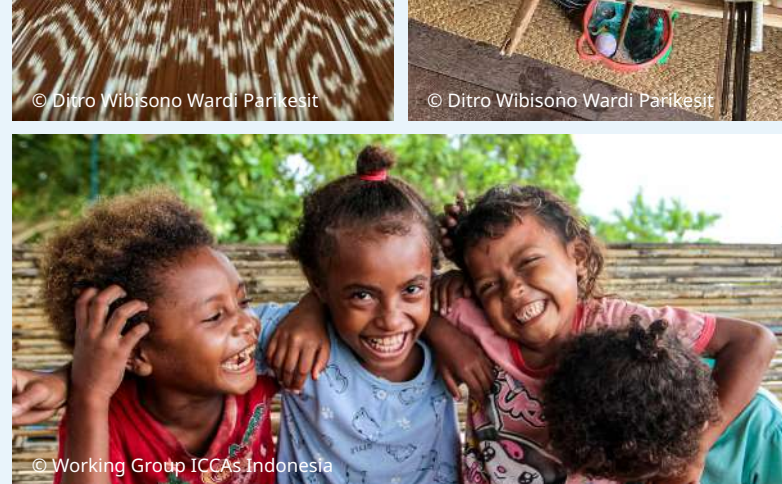
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Main actions taken to implement the target

Implementation of National Biodiversity Target 17 focuses on the inclusive participation and representation of communities in biodiversity management. Under the IBSAP 2025-2045, these efforts are organized into five action groups, as follows:

- 17.1 Stakeholder participation in the planning of protection and management of high biodiversity value areas, including preservation areas;
- 17.2 Enhancing the participation of customary and local communities in biodiversity management;
- 17.3 Enhancing the participation of women, youth, and persons with disabilities in biodiversity management;
- 17.4 Strengthening policy and regulatory frameworks related to the engagement of customary and local communities, women, youth, and persons with disabilities in biodiversity management;
- 17.5 Establishing platforms and mechanisms for customary and local communities, women, youth, and persons with disabilities to access information and participate in biodiversity management.



Summary of progress towards the target, including the main outcomes achieved

Biodiversity management requires the active contribution and participation of all stakeholders, from the national to the local levels, including customary and local communities, women, youth, and persons with disabilities. The participation of customary and local communities is essential to ensure that traditional knowledge, innovations, understandings, and practices related to biodiversity and conservation and sustainable use, developed and transmitted across generations, are effectively applied in a sustainable manner. The Indonesian Government acknowledges and appreciates the contributions of non-state actors in conserving and sustainably managing biodiversity in Indonesia through diverse conservation initiatives, such as community empowerment, capacity strengthening, documentation of traditional knowledge, conservation of wildlife and ecosystems, community-led monitoring, and other initiatives, as consolidated by the Government through a series of consultations for the development of the Seventh National Report.

The Government of Indonesia has also adopted a range of policies and regulations to ensure the recognition and full and effective participation of customary and local communities in biodiversity conservation and governance, carried out by different ministries and sectors. These include regulations on the recognition of customary/adat communities at the sub-national level, customary forests, social forestry schemes, the recognition and protection of local wisdom and traditional knowledge, and areas conserved by customary and local communities (*Areal Konservasi Kelola Masyarakat/AKKM*). These measures demonstrate Indonesia's commitment to inclusive biodiversity governance, recognizing customary and local communities not merely as beneficiaries, but as custodians and managers of biodiversity grounded in local knowledge systems. Indonesia's legal and policy framework provides a strong basis for gender equality and gender mainstreaming, despite the absence of a specific gender equality law. The 1945 Constitution guarantees equality before the law and prohibits discrimination, while [Law No. 7/1984](#), which ratifies the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), obliges the State to eliminate discrimination against women and promote equal participation in development. These commitments are operationalized through [Presidential Instruction No. 9/2000](#) on Gender Mainstreaming, which mandates the integration of gender perspectives across all sectors and levels of government.

This framework enables the implementation of National Biodiversity Target 17, which promotes gender-responsive and socially inclusive biodiversity governance. In the biodiversity sector, gender mainstreaming has been applied in community-based conservation initiatives, such as marine protected area management

and coastal ecosystem restoration, where women's groups participate in mangrove rehabilitation, community surveillance, and conservation-based livelihood activities. These practices contribute to more equitable access to benefits, strengthened local stewardship, and improved conservation outcomes, consistent with IBSAP Target 17. These efforts extend beyond addressing gender disparities between men and women and increasingly emphasize broader social inclusion by addressing gaps in access, participation, control, and benefit-sharing in development processes. This inclusive approach encompasses children, older persons, persons with disabilities, and the customary and local communities, thereby strengthening equitable and inclusive biodiversity governance.

Regarding youth engagement, the Global Youth Biodiversity Network – Chapter Indonesia (GYBN Indonesia) notes that while young people across Indonesia are actively contributing to biodiversity initiatives at local and national levels, their participation in formal policy and decision-making processes can be further strengthened. Challenges such as unequal access to information, resource limitations, geographic disparities, and limited opportunities for sustained engagement continue to influence the extent of meaningful youth involvement in biodiversity governance. Nevertheless, youth groups remain active in conservation, education, advocacy, and innovation efforts, demonstrating strong commitment and potential that can be more systematically integrated into biodiversity policy and implementation processes.

Stakeholders contributing to the achievement of this target include the Ministry of Women's Empowerment and Child Protection (KemenPPA), the Ministry of National Development Planning/National Development Planning Agency (Bappenas), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Home Affairs (Kemendagri), the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), the Ministry of Agriculture (Kementan), the Ministry of Communication and Digital Affairs (Kemenkomdigi), the Local Governments (Provincial and City/Regency), as well as non-state actors, such as Working Group ICCAs Indonesia, Global Youth Biodiversity Network - Chapter Indonesia, Biodiversity Warrior, Teens Go Green, Fauna & Flora Indonesia, Forum HarimauKita, Forum Komunikasi Kehutanan Masyarakat, and Wildlife Conservation Society - Indonesia Program.

Main Outcomes Achieved

National Indicator 17.a – Number of Local/Provincial Governments that have engaged customary and local communities, women, youth, and persons with disabilities in biodiversity management.

National Biodiversity Target 17 emphasizes the participation of multiple stakeholders within the biodiversity governance system. Stakeholder participation is assessed by the number of activities that actively involve relevant actors in the planning and protection of areas of high biodiversity value. As an illustrative example, between 2020 and 2024, the number of provinces and districts that developed Peatland Ecosystem Protection and Management Plans increased from 5 in 2020 to 17 in 2024. In parallel, the Peatland Stewardship Village Program (*Desa Mandiri Peduli Gambut*) has successfully encouraged village governments to actively engage in peatland protection and management. As of 2025, a total of 287 Peatland Care Independent Villages have been recorded (Figure 17.1).

In Indonesia, the recognition of *customary areas (wilayah adat)* has progressed through a combination of constitutional mandates, sectoral regulations, and local government actions, although implementation remains gradual and uneven. The Constitutional Court Decision No. 35/2012 affirmed that customary forests (*hutan adat*) are no longer part of state forests, thereby providing a critical legal basis for the recognition of customary areas.

The regency/city government (*pemerintah kabupaten/kota*) has recognized approximately 302 customary communities, covering a total area of 5,386,674 ha. In addition, the Government of Luwuk Utara recognized the local wisdom area covering 679 ha of the To Cerekang Customary/Adat Community. Along with these,

the government has also formally recognized 170 customary forests covering a total area of 366,988 ha (Figure 17.2), with an additional commitment to accelerate the recognition of 1.4 million ha of customary forests in the upcoming years (Ministry of Forestry, 2025).

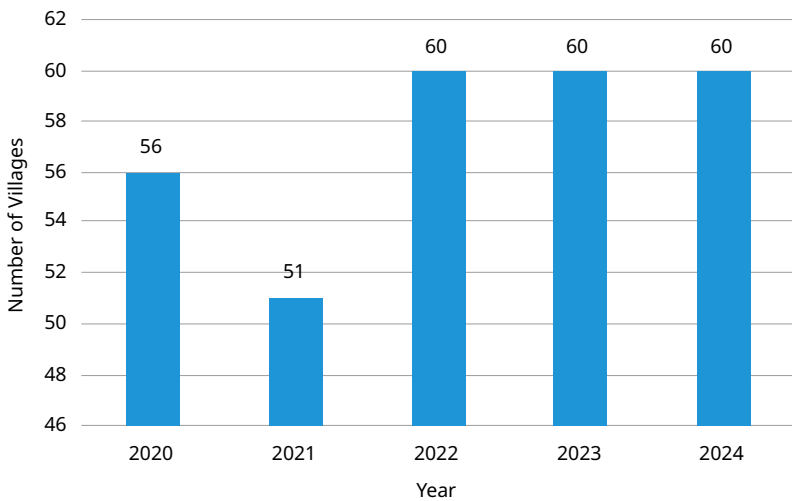


Figure 17.1. Peatland Stewardship Village Program (*Desa Mandiri Peduli Gambut*)



Figure 17.2. Designated Customary Forest (upper) and its location across Indonesia (lower)

National Indicator 17.b – Number of customary and local communities engaged in participatory biodiversity management across forests and terrestrial areas, as well as inland waters, coastal areas, and small islands

Direct community participation plays a crucial role in biodiversity management, as evidenced by data indicating the number of recognized customary forests, private forests, and areas overseen by traditional, local, and customary communities. In the coastal and small islands region, from 2018 to 2024, a total of 187 community-based conservation groups (*Kelompok Masyarakat Penggerak Konservasi/KOMPAK*) from 29 out of 38 provinces have been documented as actively involved in monitoring and conservation efforts related to biodiversity. The scope of activities undertaken by these groups is diverse, encompassing, inter alia, initiatives focused on food security, ecosystem resilience, and the ecological balance of forest and land ecosystems; the strengthening of governance for coastal and small island resources; and the enhanced role of local communities in sustainable forest resource governance and management.

The Government of Indonesia has established regulatory frameworks to promote the empowerment of customary and local communities living in and around conservation areas. Between 2020 and 2024, a total of 10,799 individuals participated in community empowerment programs in villages surrounding conservation areas. In addition, the government identified 90,649 beneficiaries of the customary forest who contribute to the conservation and governance of biodiversity.

The total area of officially designated customary forests (*hutan adat*) reached 332,505 ha, and the area of indicative customary forest is 1,109,006.58 ha (Forestry Statistics 2024). Furthermore, between 2018 and 2024, 140 customary Social Forestry Management Plans (*Rencana Kelola Perhutanan Sosial Adat*) were formally established. These documents constitute medium-term management plans developed by communities that have obtained formal recognition and designation as social forestry areas, including customary forests. They incorporate traditional and local knowledge into community participatory planning. These community-led participatory planning efforts have led to full and effective participation of communities in forest management activities, including protection, sustainable use of forest products, and the development of forest-based livelihoods. The Ministry of Environment, the Ministry of Forestry, and the Ministry of Marine Affairs and Fisheries, as leading sectors in biodiversity management, are responsible for providing guidance and capacity-building for customary and local communities engaged in biodiversity management.

In addition, voluntary data collection initiatives led by civil society organizations have played an important role. The Customary Area Registration Agency (*Badan Registrasi Wilayah Adat/BRWA*), for example, has recorded communities that have conducted participatory mapping of their customary areas, resulting in approximately 1,583 maps covering more than 32 million ha by March 2025. This process showcases community-led efforts to self-document ancestral domains. These initiatives are complemented by other registries, such as that of the Working Group ICCAs Indonesia, which has documented around 293 customary and local communities managing more than 642,457 ha of Indigenous and Community Conserved Areas (ICCAs)-*Areal Konservasi Kelola Masyarakat* (Figure 17.3). The documentation of customary areas and traditional knowledge, led by conservation initiatives by communities and civil society organizations, has been pivotal in supporting the government in accelerating the recognition and protection of customary rights and traditional knowledge.

In the Marine Sector, until 2024, at least 53 customary communities managed areas for biodiversity conservation in coastal areas and small islands, which were recognized and accommodated within the traditional zone, with a total area of 296,161.01 ha, of which 70% were facilitated to strengthen their capacity in marine and coastal spatial management. Gender mainstreaming in the socio-cultural sector, including environmental management, constitutes a key policy priority to ensure the participation of customary and local communities, women, youth, and persons with disabilities in biodiversity management.

By 2045, the Government targets that all 38 provinces in Indonesia will have established gender mainstreaming policy documents. In addition, continuous capacity-building support is provided to youth and community-based organizations to strengthen inclusive participation.

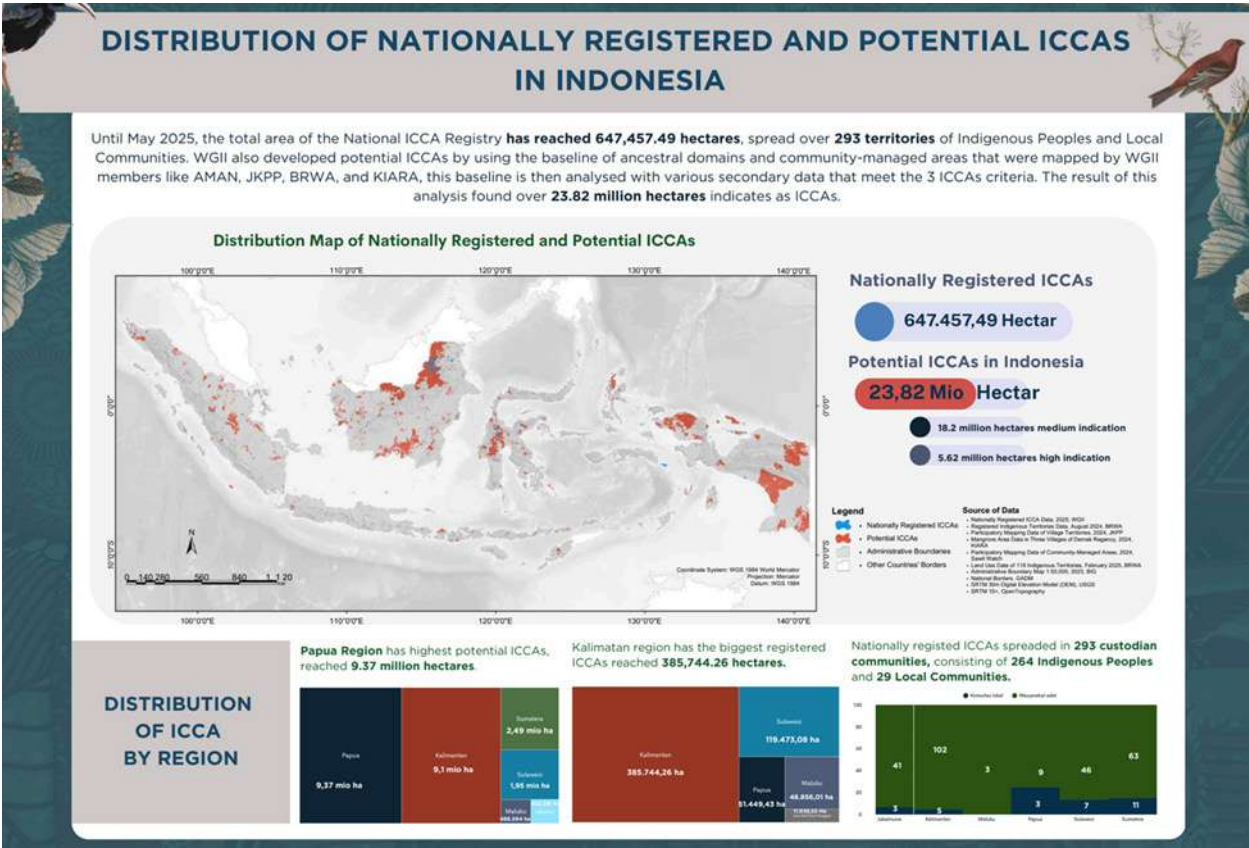


Figure 17.3. Distribution of the voluntary registry of community conserved areas

Summary of key challenges encountered and different approaches that may be taken for further implementation

The challenges encountered are largely concentrated in procedural aspects, program sustainability, and the strengthening of legal frameworks, which directly affect the effective implementation of inclusive biodiversity governance principles:

1. Fluctuating community participation. Levels of participation and engagement of women, youth, and persons with disabilities remain varied, with declining trends observed in recent years. For example, data on women's participation in decision-making roles within program households or collaborative arrangements are limited; available records from the Ministry of Forestry indicate that in 2024, only 16 women were documented as decision-makers.
2. Limited availability of disaggregated data. Consistent and integrated information on the roles and contributions of vulnerable groups, including women, youth, persons with disabilities, and customary and local communities, remains limited and fragmented across institutions.
3. Local institutional capacity constraints. Not all provincial and district governments have established effective mechanisms or participatory forums to ensure inclusivity in biodiversity-related decision-making processes.
4. Legal and technical barriers The designation of Customary Forests (*Hutan Adat*), Private Forests (*Hutan Hak*), and community-managed areas continues to face procedural delays, administrative constraints, and challenges related to legal recognition. In addition, differing perceptions persist regarding the historical presence and longstanding resource use by communities within forest areas, which, in some cases, create tensions over access rights and governance authority.

- 5. Limited access to information. Existing mechanisms for information dissemination and biodiversity education have not yet fully reached customary and local communities, limiting informed participation.

Approaches and Action Plans for Further Implementation. To address these challenges, Indonesia will pursue the following strategic actions:

1. Strengthening policies and regulatory frameworks: Accelerating the recognition of Customary Forests and Private Forests, while expanding the application of regulations that guarantee equitable participation in biodiversity governance.
2. Enhancing community and subnational capacity: Strengthening the capacity of communities and local governments through training, outreach, and institutional support to improve readiness for inclusive biodiversity management.
3. Developing integrated data systems: Establishing integrated databases on participation and representation, disaggregated by gender, age, disability status, and community type, to support evidence-based planning and monitoring.
4. Expanding access to information and technology: Providing digital platforms and local communication mechanisms to enhance transparency and facilitate access to biodiversity-related information.
5. Strengthening multi-stakeholder collaboration: Engaging civil society organizations, community-based organizations, academia, and the private sector to sustainably support the role of customary and local communities in biodiversity governance.

 Examples or cases to illustrate the effectiveness of the actions taken to implement the target

National Biodiversity Target 17 aims to achieve inclusive participation in biodiversity governance. The effectiveness of actions taken to achieve this target is demonstrated through concrete cases and measurable achievements across multiple sectors. This effectiveness is reflected in strengthened recognition of customary and local communities, and in the availability of mechanisms for access to information and for the sustainable management of biological resources.

Formal Recognition and the Effectiveness of Local Wisdom-Based Conservation Actions to enhance the participation of customary and local communities have demonstrated effectiveness through the formalization of management rights and tangible conservation outcomes on the ground:

- **Sustainable Honey Harvesting in Ujung Kulon National Park**
One notable example is the sustainable harvesting of Apis dorsata honey by the Forest Honey Farmer Group in Ujung Kulon National Park. The effectiveness of this action is reflected in increased community awareness of forest conservation, as communities recognize that well-preserved forest ecosystems ensure greater availability of forage for bees, resulting in improved honey production and livelihoods.
- **Local Regulatory Support**
The mainstreaming of local wisdom has been strengthened through the adoption of local regulations. These include, inter alia, the Regent Regulation of Buton (2018), Mayor Regulations of Ambon City (2019, 2023), Regent Regulation of Fakfak (2019), Regent Regulation of the Tanimbar Islands (2019), and Regent Regulation of Wakatobi (2024). These regulations explicitly recognize and protect coastal and marine resource management systems based on customary law and local wisdom. Economic Empowerment and Gender Representation Actions aimed at ensuring gender equality and the inclusion of vulnerable groups have generated measurable outcomes, particularly for women in natural resource management.

- **Women's Access under Social Forestry Schemes**
The effectiveness of the Social Forestry programs is evidenced by data showing that 10,351 female-headed households received social forestry management approvals between 2018 and 2025, indicating increased legal access for women to forest resources.
- **Women's Empowerment Program (Bang PeSoNa)**
The Bang PeSoNa program, which focuses on women's economic empowerment within social forestry, involved 580 women's groups in 2024, demonstrating women's growing role in strengthening social forestry-based livelihoods.
- **Women's Participation in Research and Decision-Making**
Research institutions such as the National Research and Innovation Agency (BRIN) actively monitor women's participation in decision-making roles, including as research group leaders or project coordinators within the Bioeconomy Research Center (PRBE). This reflects progress in ensuring gender equality in research governance and collaborative decision-making processes.
- **Coastal Women Leaders in Kuala Selat (Mangrove Restoration)**
In Kuala Selat, Indragiri Hilir, Riau Province, women have become central actors in restoring degraded mangrove ecosystems affected by coastal abrasion. Through the Mangroves for Coastal Resilience (M4CR) initiative, local women, led by Nur Rizawati, Chair of the Forest Farmers Group (*Kelompok Tani Hutan*) Mekar Bersama, have moved beyond traditional domestic roles to participate actively in mangrove seedling preparation, planting, maintenance, and ecological monitoring. Their leadership has opened opportunities for economic empowerment through processing local products and conservation-related work. In 2024, 378 women in Riau were reported to be actively involved in mangrove planting and management, demonstrating how gender-inclusive coastal restoration can advance both biodiversity and socioeconomic resilience. (Reference: <https://tirto.id/penyelamatan-mangrove-dan-peranperempuan-di-kuala-selat-hiEn>)
- **UPSA Pelalawan (Women Farmers in Sustainable Agroforestry)**
In the Siak-Pelalawan landscape of Riau Province, sustainable landscape and agroforestry programs have supported women farmers as mentors in sustainable farming and non-timber forest product management. Although specific program documentation on UPSA Pelalawan is limited in public sources, landscape programs such as the Siak Pelalawan Landscape Program emphasize social inclusion and sustainable agroforestry practices that create enabling conditions for women to engage in diversified livelihood activities within forest and peatland ecosystems. These interventions often encompass mentorship roles for women in agroforestry systems, including the sustainable harvesting and processing of forest products. (Reference: Siak Pelalawan Landscape Programme (SPLP) Resources <https://www.siakpelalawan.net/resources>)
- **Berbak-Sembilang National Park (Women Orchid Conservation and Role Models)**
Berbak-Sembilang, one of Indonesia's largest peat swamp and wetland ecosystems designated as a Ramsar site and UNESCO Biosphere Reserve, hosts a rich diversity of flora including orchid species that are endemic and ecologically significant. Although specific case studies on women orchid stewards in this landscape are not widely documented online, the presence of 43 orchid species in Berbak-Sembilang and ongoing community and conservation activities provide a foundation for women to become role models in forest and plant conservation. Empowering women orchid conservationists, linked through cross-village networks, collaboration with the Natural Resources Conservation Agency (BKSDA), universities, or civil society, can be an inspiring model for gender-responsive biodiversity stewardship in peatland and forest ecosystems. (Reference: 43 Anggrek Species in Taman Nasional Berbak and Sembilang <https://sekitarjambi.com/43-spesies-anggrek-hidup-di-taman-nasionalberbak-dan-sembilang/>)

- **Community-led conservation case study**

The Tanggedu Customary Law Community operates an inclusive governance system rooted in a structured patrilineal social organization. Strategic decision-making regarding the management of customary areas is conducted through the deliberative mechanisms known as Pulu Pamba and Bata Bakul, which aim to achieve collective consensus, or Hama nanyaka. From an academic perspective, this system demonstrates representational effectiveness through a specific division of functional roles: the Ratu serves as the spiritual leader, selected based on merit and the capability to officiate customary rituals; the Ina Pendi/Ama Diha acts as the holder of authority regarding resource utilization policies; and the Wunang functions as the inter-group liaison or communicator. Furthermore, the integration of women's roles is evident in the operational conduct of agricultural rituals, ensuring that the voices of diverse social strata are accommodated to maintain the socio-ecological harmony of their 4,116.35-ha land.

- **Customary forest study case**

"For the forest is the heart. Should it cease to beat, the equilibrium of our existence is uprooted." - Maman Sahroni, Kasepuhan Pasir Eurih.

To the customary community of Kasepuhan Pasir Eurih, the forest is conceptualized as the "heart of life," functioning as the fundamental pillar of ecological and social equilibrium. This cosmological view is physically manifested in their customary spatial zoning system, which includes: leuweung tutupan (cover forest) functioning as a core conservation zone for hydrological integrity; leuweung titipan (entrusted forest), a sacralized area; and leuweung garapan (cultivation forest) designated for sustainable agroforestry (huma gebrugan). Spanning 1,145 hectares, this land is rich in biodiversity, including tree species of high ecological value, and is safeguarded through the Pagawe Ronda Gunung, a community surveillance mechanism capable of real-time detection of encroachments.

Governance structures were significantly reinforced following the promulgation of Lebak Regency Regional Regulation (Perda) Number 8 of 2015 concerning the Recognition, Protection, and Empowerment of Kasepuhan Customary Law Communities. This regulation formally recognizes the legal status of the Kasepuhan Pasir Eurih Customary Law Community and facilitates the official designation of a Customary Forest (*Hutan Adat*), thereby strengthening the community's legal standing in land management. Consequently, the community possesses the authority to enforce regulations through a dual mechanism of customary law and state law. This includes imposing sanctions on forest degradation, an action that was previously challenging to implement, particularly when confronting external threats such as illicit timber extraction. In the post-recognition era, the community institutionalized the Kasepuhan Pasir Eurih Customary Youth Community (KOMPAK) as a platform for intergenerational engagement in biodiversity management and local economic development. These efforts to galvanize youth and women's participation underscore a commitment to inclusive governance, ensuring the sustainability of natural resource management and the regeneration of customary leadership for the future.

- **Case study recognition of customary rights**

The Kataloka Customary Community (*Negeri Adat Kataloka*) is situated on Gorom Island, East Seram Regency, Maluku Province. The management area of the Kataloka Customary community is recognized nationally as a Regional Marine Conservation Area (*Kawasan Konservasi Laut Daerah*). Spanning 69,493 hectares, the community retains rights to commercial use within this zone. Customary regulations governing natural resource utilization were established by the leader of Kataloka in 2014 and subsequently reaffirmed during the Kataloka Festival in 2017. Through the tradition of Ngam, locally synonymous with Sasi, the community's management area is designated as a "fish market." This zone functions as Spawning Aggregation Sites (SPAGS), critical breeding grounds for high-economic-value species such as the Humphead Wrasse (*Cheilinus undulatus*), Giant Clam, and Grouper.

Academically, Sasi practice is conceptualized as a form of traditional fisheries management that prohibits extraction during specific periods to ensure natural stock regeneration. In practice, Ngam (*Sasi*) strictly prohibits fishing activities, sand mining, and coral extraction within the "fish market" zone, and extends a ban on destructive fishing gear, such as dynamite and potassium cyanide-across the entire marine tenure (*petuanan*) of Kataloka. Management of this land is led by the Wanu Atalo'a customary institution through the Leawana surveillance force, ensuring that marine resource utilization across the 69,493 ha remains within safe biological limits (Maximum Sustainable Yield). The Leawana is a composite body comprising farming groups, fisherfolk, and tourism operators, as well as a dedicated Leawana customary guard that actively monitors the operations of this Community-Managed Conservation Area. These regulations are codified in the Ngam Inscription and the Decree of the Leader of the Kataloka. Nevertheless, this codified customary law remains a living framework, subject to community development aimed at harmonizing traditional values with contemporary dynamics. For instance, sanctions are adaptive, ranging from monetary fines to corporal punishment administered by the leader.

- **Sustainable Village Forest Management to Support FOLU Net Sink 2030**

Since 2023, Belantara Foundation has supported sustainable village forest management in Riau Province across seven village forests covering 18,524 hectares and involving at least 169 community members. The program contributes to Indonesia's FOLU Net Sink 2030 target by strengthening community-based forest governance while improving local livelihoods. Working in collaboration with village governments, forest management units, universities, civil society organizations, and private sector partners, the initiative focuses on securing legal recognition for village forests, strengthening management plans, and building local capacity. Communities are supported in conducting forest patrols, carrying out biodiversity assessments, and improving monitoring using simple technologies and satellite imagery. At the same time, the program promotes sustainable economic activities to reduce pressure on forests. Farmers and fishers are assisted in diversifying livelihoods and adopting more sustainable practices, enabling them to improve productivity without expanding into forest areas. Through this integrated and multi-stakeholder approach, village forests are better protected, ecosystem functions are maintained, and local communities benefit from more secure and sustainable livelihoods.

- **Case study of participation of local/customary communities in the formulation of provincial IBSAP**

The IBSAP (Indonesian Biodiversity Strategy and Action Plan), which serves as the national framework for biodiversity management, requires operationalization at the subnational level. Following the ratification of IBSAP in August 2024, regional governments in four provinces, East Java, Southwest Papua, Aceh, and East Kalimantan, collaborated with civil society organizations, including the Working Group ICCAs Indonesia and local NGOs, to advocate for the formulation of inclusive Biodiversity Management Master Plans (*Rencana Induk Pengelolaan Keanekaragaman Hayati or RIP Kehati*). This commitment was fortified through the issuance of Decrees for the Formulation of RIP Kehati, which formally integrated representatives of local/customary communities into the drafting teams. Specifically, the Osing Customary Community in Banyuwangi (East Java), followed by the Paser Adan, Kutai Customary Lawas Sumping Layang, and Paser Migi Customary Community in East Kalimantan, as well as the Moi Customary Community in Papua, have participated actively in responding to the *RIP Kehati* formulation agenda.

A fundamental principle governing this process is inclusive community engagement, initiated from the preliminary planning stages. Historically, these communities have played a pivotal role in biodiversity management at the grassroots level (*tingkat tapak*), stemming from their direct proximity to biological resources, their use of these resources for daily subsistence, and their immediate exposure to the impacts of environmental change or the benefits of management interventions. Consequently, their inclusion from the inception of regional biodiversity management planning constitutes a critical

determinant for the successful realization of IBSAP targets. This engagement strategy encompasses capacity-building and training for local/customary communities to ensure their understanding of the national IBSAP framework, principles, and targets. This process serves as essential initial capital for the community, bolstering their grasp of policy substance to facilitate “active and meaningful participation,” rather than mere tokenistic attendance. Accordingly, this practice contributes directly to achieving National Target 17 while simultaneously reinforcing inclusive, participatory, and sustainable biodiversity governance at the regional level.

• **The Tanggedu Customary Law Community**

The Tanggedu Customary Law Community operates an inclusive governance system rooted in a structured patrilineal social organization. Strategic decision-making regarding the management of customary areas is conducted through the deliberative mechanism known as Pulu Pamba, Bata Bakul, which aims to achieve collective consensus, or Hama nanyaka. From an academic perspective, this system demonstrates representational effectiveness through a specific division of functional roles: the Ratu serves as the spiritual leader, selected based on merit and the capability to officiate customary rituals; the Ina Pendi/Ama Diha acts as the holder of authority regarding resource utilization policies; and the Wunang functions as the inter-group liaison or communicator. Furthermore, the integration of women’s roles is evident in the operational conduct of agricultural rituals, ensuring that the voices of diverse social strata are accommodated to maintain the socio-ecological harmony of their 4,116.35 ha areas.

• **Access to Information, Capacity Development, and Partnerships**

The effectiveness of actions to ensure access to information and strengthen capacity is demonstrated through established mechanisms and cumulative outcomes:

- » **Large-Scale Capacity Development:** By 2024, a cumulative total of 25,722 community members had received targeted training, including in aquaculture, salt production, conservation, processing, and fisheries product marketing.
- » **Transparent Access to Information:** Effectiveness in ensuring access to information is demonstrated through the establishment of Public Information Request Mechanisms that allow written and oral requests for information from government institutions, academia, civil society organizations, and individual citizens.
- » **Partnerships and Scientific Output:** Community partner viewpoints on forest partnerships; Evaluating a forestry partnership between a private company and local people in East Kalimantan, Indonesia; The Coastal Communities’ Involvement in Addressing the Impacts of Climate Change (submitted to an international journal); and Research on women’s roles in local contexts, such as Local Actions, Global Impact: Women’s Agency in Timor-Leste.

 Indicator Data

Headline Indicator 22.1 Land-use change and land tenure in the traditional territories of indigenous peoples and local communities

- *Not relevant*
- The terminology of Indigenous lands or territories as collectively held and governed lands, territories, and natural resources of Indigenous Peoples does not fully correspond with the Indonesian regulatory framework. Indonesia formally recognizes customary forests, where the rights granted are limited to management authority, while the areas remain under the governance of the national government within its territorial jurisdiction.

Binary Indicator 22.b Number of countries taking action toward the full, equitable, inclusive, effective, and gender-responsive representation and participation in decision-making related to biodiversity, as well as access to justice and information by Indigenous Peoples and Local Communities, while respecting their cultures and rights over lands, territories, resources, and traditional knowledge. This also includes women and girls, children and youth, and persons with disabilities, and ensures the full protection of environmental human rights defenders

22.1 Does your country have policy, legislative, and administrative frameworks at the national and subnational levels that:

(a) Ensure full, equitable, inclusive, effective, and gender-responsive representation and participation in biodiversity decision-making for the following groups (select all that apply):

- Indigenous Peoples and Local Communities
- Women and girls
- Children and youth
- Persons with disabilities

(b) Respect the following rights and cultures of Indigenous Peoples and Local Communities (select all that apply):

- Culture and practices
- Rights over lands and territories
- Rights over resources
- Rights over traditional knowledge

(c) Ensure the full protection of environmental human rights defenders?

Yes

(d) Ensure public access to biodiversity-related information for the following groups (select all that apply):

- Indigenous Peoples and Local Communities
- Children and youth
- Women and girls
- Persons with disabilities

(e) Provide access to justice for one or more of the following groups (select all that apply):

- Indigenous Peoples and Local Communities
- Women and girls
- Children and youth
- Persons with disabilities

22.2 Does your country have operational frameworks and mechanisms that support the policy, legislative, and administrative frameworks listed under question 22.1?

Fully

22.3 Does your country monitor the following:

(a) The full, equitable, inclusive, effective, and gender-responsive representation and participation in biodiversity decision-making of the following groups (select all that apply):

- Indigenous Peoples and Local Communities
- Women and girls
- Children and youth
- Persons with disabilities

(b) The following cultures and rights of Indigenous Peoples and Local Communities (select all that apply):

- Culture and practices
- Rights over lands and territories
- Rights over resources
- Rights over traditional knowledge

(c) The full protection of environmental human rights defenders?

Yes

Comments

All regulations related to participation in biodiversity management apply inclusively to all citizens and do not introduce segregation in the context of Indigenous Peoples and Local Communities (referred to in Indonesia as Customary and Local Communities), women and girls, children and youth, and persons with disabilities. In the context of Customary and Local Communities, Indonesia has regulations and policies that guarantee rights and protection, including protection for environmental human rights defenders.

Binary Indicator 23.b Number of countries with legal, administrative, or policy frameworks, among others, to implement the Gender Plan of Action (2023–2030), ensuring that all women and girls have equal opportunities and capacities to contribute to the three objectives of the Convention, including by ensuring women’s equal rights and access to land and natural resources

23.1 Does your country have mechanisms to facilitate the full, equitable, meaningful, and informed participation and leadership of all women and girls at all levels of action, engagement, policy, and decision-making related to biodiversity?

Fully

23.2 Has your country adopted legal, administrative, or policy measures that explicitly recognize and protect the rights of all women and girls to land and natural resources, including access to them?

Fully

23.3 Does your country explicitly apply a gender-responsive approach and recognize the roles and contributions of women and girls in implementing the Framework through its national reports or its national biodiversity strategy and action plan?

Fully

23.4 Does your country collect and analyze sex-disaggregated data to assess the different impacts of biodiversity policies and programmes?

No

National Indicator 17.a. Number of provincial governments that have engaged customary and local communities, women, youth, and persons with disabilities in biodiversity management

Use national data set

Indicator	Year	Unit	Value	Footnote
17.a. Number of provincial governments that have engaged customary and local communities, women, youth, and persons with disabilities in biodiversity management	2024	Number of Provinces	29	Cumulative from 2018-2024, 28 out of 38 provinces

National Indicator 17.b. Number of customary and local communities involved in participatory biodiversity management in forests and terrestrial areas, as well as inland waters, coastal areas, and small islands

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
17.b. Number of customary and local communities involved in participatory biodiversity management in forests and terrestrial areas, as well as inland waters, coastal areas, and small islands	Realm	Terrestrial	2024	Number of Peatland Stewardship Village Programs	60	
			2023	Number of Peatland Stewardship Village Programs	60	
			2022	Number of Peatland Stewardship Village Programs	60	
			2021	Number of Peatland Stewardship Village Programs	51	
			2020	Number of Peatland Stewardship Village Programs	56	
		Coastal & Small Islands	2024	Number of Community Groups for Conservation	21	

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
			2023	Number of Community Groups for Conservation	22	
			2022	Number of Community Groups for Conservation	21	
			2021	Number of Community Groups for Conservation	28	
			2020	Number of Community Groups for Conservation	10	
			2019	Number of Community Groups for Conservation	28	
			2018	Number of Community Groups for Conservation	57	

National Biodiversity Target 18

Enhancing Transparency of the Private and Financial Sectors in Biodiversity Management and Reducing Negative Impacts of Business Operations on Biodiversity



 Main actions taken to implement the target

The implementation of National Biodiversity Target 18 emphasizes transparency in the private and financial sectors, with the aim of ensuring that business operations contribute to biodiversity conservation while minimizing adverse environmental impacts. Under the IBSAP 2025–2045, these efforts are organized under one action group, as follows:

18.1 Strengthening biodiversity management disclosure by the private sector and financial institutions.

 Summary of progress towards the target, including the main outcomes achieved

To strengthen sustainability practices in the private sector and financial institutions, the Government of Indonesia has developed a range of national instruments and policies. One key instrument is the Company Performance Rating Program in the Environmental Management (*Program Penilaian Peringkat Kinerja Perusahaan dalam Pengelolaan Lingkungan Hidup/PROPER*), regulated under [the Minister of Environment Regulation No. 7 of 2025](#). The objective of PROPER is to promote environmental compliance and environmental excellence. The program combines mandatory participation for designated high-impact companies with voluntary participation for other companies that wish to demonstrate good environmental practices.

PROPER classifies corporate environmental performance into five ratings: Gold and Green for companies that go beyond compliance; Blue for regulatory compliance; and Red and Black for non-compliance, with Black indicating severe violations. The program assesses compliance with environmental regulations while encouraging companies to exceed minimum requirements through innovation, resource-efficiency initiatives, and biodiversity conservation efforts in and around industrial areas.

Over time, participation in PROPER has expanded, with an increasing number of companies attaining green and gold ratings, reflecting stronger environmental performance and innovation. Biodiversity-related indicators, such as habitat restoration, reforestation, and protection of local ecosystems surrounding industrial sites, have been integrated into the PROPER assessment framework. In addition, the program provides technical guidance, peer learning, and capacity-building support for participating companies to understand better and manage their dependencies and impacts on biodiversity. Strong PROPER performance has also generated reputational benefits, including improved access to financial institutions and investors, as well as strengthened relationships with government authorities and communities living around industrial areas. The structure and criteria of PROPER are aligned with Environmental, Social, and Governance (ESG) principles, which are increasingly used by investors as indicators of environmental and financial risk.

In parallel, the Financial Services Authority (OJK) has strengthened sustainability disclosure requirements through [OJK Regulation No. 51 of 2017](#) and [OJK Circular Letter No. 16 of 2021](#), which mandate the implementation of sustainable finance by financial institutions, issuers, and public companies. These entities are required to prepare Sustainable Finance Action Plans (*Rencana Aksi Keuangan Berkelanjutan/RAKB*) and Sustainability Reports as part of their sustainability performance disclosure. These requirements were further reinforced by [Law No. 4 of 2023](#) on the Development and Strengthening of the Financial Sector (UU P2SK), which underscores the role of financing and investment in supporting sustainable business practices and facilitating the transition toward environmentally responsible economic activities.

The Government has also introduced bridging instruments that link environmental sustainability with financial decision-making. These include the [Sustainable Finance Taxonomy](#) (*Taksonomi untuk Keuangan Berkelanjutan Indonesia/TKBI*), which serves as a reference for assessing corporate sustainability performance

and guiding transition planning for financial sector actors, issuers, and public companies, as well as the [Climate Risk Management and Scenario Analysis \(CRMS\)](#) framework in the banking sector to evaluate strategies for managing climate-related risks over the short, medium, and long term.

Indonesia is advancing alignment with international sustainability standards through the adoption of Sustainability Disclosure Standards (*Pernyataan Standar Pelaporan Keberlanjutan/PSPK 1 and PSPK 2*), issued by the Sustainability Standards Board of the Indonesian Institute of Accountants (*Dewan Standar Keberlanjutan - Ikatan Akuntan Indonesia*) in 2024. These standards are adapted from International Financial Reporting Standards (IFRS) S1 on general sustainability-related financial disclosures and IFRS S2 on climate-related disclosures developed by the International Sustainability Standards Board. PSPK 1 establishes general requirements for sustainability disclosures across sectors, while PSPK 2 focuses specifically on climate-related financial disclosures aligned with the Task Force on Climate-related Financial Disclosures (TCFD) framework. Their adoption provides a foundation for future nature- and biodiversity-related disclosure standards, including those anticipated under IFRS S3. Implementation will be phased, with early adoption encouraged from 2025 and full integration expected by 2027.

Collaboration between government and business has also been strengthened through multi-stakeholder partnerships and voluntary disclosure initiatives. By mid-2025, outreach and capacity-building programs related to the Taskforce on Nature-related Financial Disclosures (TNFD) had reached more than 50 companies, including major state-owned and private enterprises in the energy, manufacturing, and agriculture sectors. These initiatives have increased awareness and readiness among companies to assess and disclose their dependencies, risks, and impacts related to nature, contributing to improved transparency and informed decision-making.

Stakeholders contributing in achieving this target include the Financial Services Authority (OJK), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Agriculture (Kementan), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Energy and Mineral Resources (Kemen ESDM), the Ministry of National Development Planning/National Development Planning Agency (Bappenas), the Ministry of Finance (Kemenkeu), the Ministry of State-Owned Enterprises (Kementerian BUMN), Bank Indonesia (BI)s, and non-state actors such as Indonesia Business Council for Sustainable Development, PT. Avia Avian Tbk, PT. Bambu Nusa Verde, PT. Mitra Kiara Indonesia, Mutuagung Lestari Tbk, PT. Restorasi Habitat Orangutan Indonesia, PT. Bayer Indonesia, PT. Pertamina Patra Niaga AFT Ahmad Yani, PT. Pembangunan Jaya Ancol Tbk, Pan Brothers, PT. Aneka Tambang Tbk UBPE Pongkor, PT. Astra Agro Lestari Tbk, PT. ANTAM Tbk UBPB Kalimantan Barat, PT. Kilang Pertamina Internasional RU II Production Sungai Pakning, PT. Pungkook Indonesia One Grobogan, PT. Pertamina Patra Niaga AFT BIL, PT. Panarub Industry, PT. Sipef Biodiversity Indonesia, CropLife Indonesia, PT. Kilang Pertamina Internasional RU II Dumai, PT. Kilang Pertamina Internasional RU IV Cilacap, PT. PGE Tbk Area Kamojang, PT. Solusi Bangun Indonesia Tbk, PT. Ekosistem Khatulistiwa Lestari, PT. PLN (Persero), PT. KPI Unit VI Balongan, PT. Polytama Propindo, PT. Kilang Pertamina Internasional RU III, PT. Semen Indonesia Tbk, PT. Pupuk Sriwidjaja Palembang, PT. Pertamina Patra Niaga Integrated Terminal Makassar, PT. Pertamina Patra Niaga Integrated Terminal, PT. Pertamina Patra Niaga Fuel Terminal Parepare, PT. Pertamina Patra Niaga AFT Supadio, PT. East West Seed Indonesia, PT. Bukit Asam Tbk, PT. Freeport Indonesia, PT. Bio Farma (Persero), PT. Pertamina Geothermal Energy Area Ulubelu, and PT. Indonesia Asahan Aluminium.

Main Outcomes Achieved

Headline Indicator 15.1 – Number of companies disclosing biodiversity-related risks, dependencies, and impacts

One of the key outcomes is reflected in the increasing number of companies that disclose biodiversity and environmental management practices and achieve beyond-compliance performance under the PROPER scheme, as indicated by Green and Gold ratings.

Between 2018 and 2024, the number of companies attaining PROPER Green and Gold ratings (Figure 18.1) shows an overall upward trend, increasing from 175 companies in 2018 to 312 companies in 2024 (Data Ministry of Environment, 2025), representing a substantial expansion in corporate environmental leadership. This trend indicates growing adoption of biodiversity-friendly practices, innovation, and improved environmental governance among participating companies.

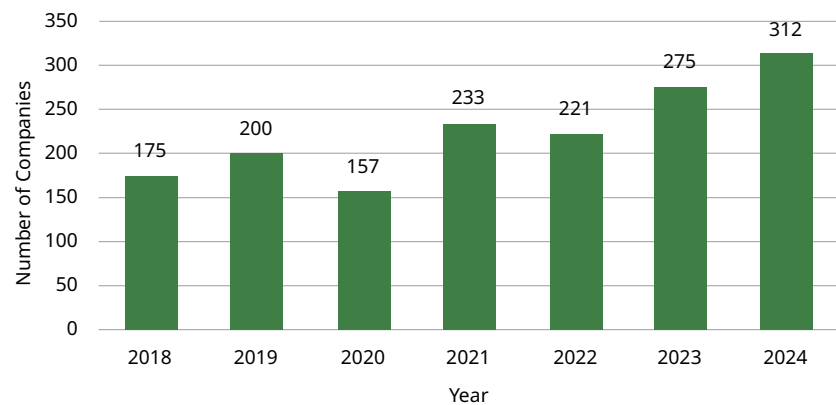


Figure 18.1. Number of Companies Attaining PROPER Green and Gold Ratings

The increase in beyond-compliance ratings reflects strengthened corporate disclosure and improved management of biodiversity-related risks and impacts, particularly in sectors with high environmental footprints. Companies achieving Green and Gold ratings are required to demonstrate proactive measures, including ecosystem restoration, resource efficiency, waste reduction, emissions management, and biodiversity conservation initiatives within and around their operational areas.

Trends in sustainability reporting by issuers and public companies to the Financial Services Authority (OJK) show a consistent increase over time (Figure 18.2). This upward trend reflects growing compliance and awareness among market actors regarding sustainability disclosure requirements.

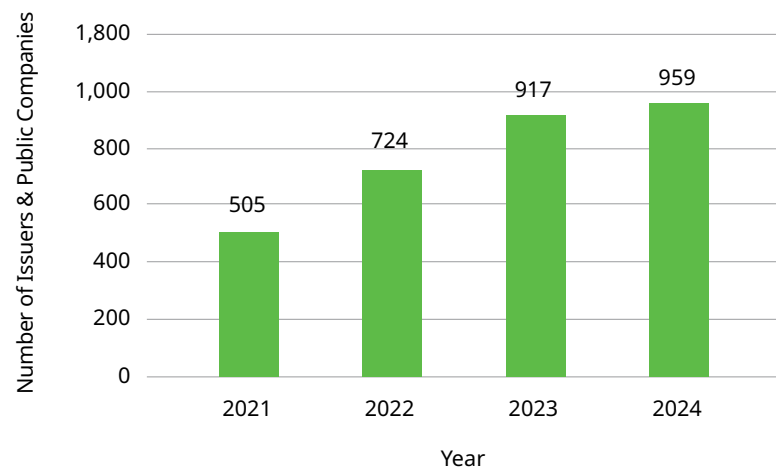


Figure 18.2. Trends in sustainability reporting by issuers and public companies to the Financial Services Authority (OJK)

National Indicator 18.a – Percentage of companies and financial institutions reporting on biodiversity and environmental management

Indicator 18.a is calculated as the percentage of companies attaining PROPER Gold and Green ratings out of all companies reporting under the PROPER program. It is calculated yearly using the formula:

$$(Gold + Green \text{ rated companies} / total \text{ companies reporting}) \times 100\%$$

Although the proportion of companies achieving Gold and Green ratings shows a fluctuating and slightly declining trend, declining from 9.94% in 2019 to 6.94% in 2024, the total number of companies participating in PROPER has increased substantially, from 1,872 companies in 2018 to 4,495 companies in 2024. In absolute terms, the number of companies attaining Gold and Green ratings has increased over time (from 175 in 2018 to 312 in 2024), indicating broader participation and expansion of environmental reporting coverage, even as the relative percentage of top-performing companies varies.

Summary of key challenges encountered and different approaches that may be taken for further implementation

Based on the implementation context of National Biodiversity Target 18, several key challenges have been identified:

- Limited Human Resource Capacity**

Many companies continue to face constraints in human resources, technical expertise, and awareness in implementing sustainability practices and biodiversity-related reporting in line with regulatory requirements, such as OJK Regulation No. 51/2017, as well as emerging frameworks like the Taskforce on Nature-related Financial Disclosures (TNFD). Continued efforts to expand technical guidance, learning opportunities, and peer exchange may support broader readiness among companies, including small and medium-sized enterprises, to engage in sustainability and biodiversity disclosure.
- Complexity of Integrating Global Standards**

Aligning international standards, such as IFRS S1 and S2, and the potential future adoption of IFRS S3, with national regulatory and operational contexts remains complex and may require further regulatory alignment, capacity development, and careful phasing of implementation. Therefore, a gradual and adaptive approach to harmonization, informed by ongoing evaluations of PSPK 1 and PSPK 2, may help ensure that global standards are integrated in a manner that reflects national circumstances and varying levels of institutional readiness.
- Limitations in Oversight and Enforcement**

While key regulatory frameworks, including POJK No. 51/2017 and Law No. 4 of 2023 (UU P2SK), are in place, monitoring and enforcement of compliance, particularly related to Sustainability Reports and Sustainable Finance Action Plans, remain challenging, especially in non-financial sectors. Strengthening coordination, information systems, and verification processes may help improve the consistency and effectiveness of oversight over time.
- Insufficient Data and Metrics**

Assessing corporate impacts on biodiversity continues to be constrained by the limited availability of consistent, comparable, and nationally standardized data and metrics. Further development of shared methodologies, data-sharing mechanisms, and indicator guidance could support more robust monitoring and reporting of biodiversity-related impacts.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

A notable example of successful implementation of National Biodiversity Target 18 is the initiative of PT. Perusahaan Listrik Negara (PLN) as the first adopter of the Taskforce on Nature-related Financial Disclosures (TNFD) framework in Indonesia and the only global electricity provider to publish a dedicated TNFD Report.

PLN's adoption of the TNFD framework demonstrates the practical application of nature-related risk disclosure in the energy sector. Through this assessment, PLN identified that fossil-fuel-based power generation remains dependent on non-renewable coal and natural gas resources, both of which are increasingly exposed to supply risks, price volatility, and carbon regulation. The analysis also highlighted the company's reliance on water for cooling and steam generation, recognizing potential vulnerabilities to changing hydrological conditions.

The PLN TNFD Report facilitates greater transparency on the company's operational dependencies and impacts on biodiversity, supporting the development of mitigation strategies such as improved water-efficiency measures and the accelerated diversification toward renewable energy sources. This case demonstrates the effectiveness of the TNFD framework in promoting nature-related risk management and corporate transparency within the energy sector.

PLN has also achieved beyond-compliance performance under PROPER, particularly in the areas of energy and resource efficiency, emission reduction through its decarbonisation roadmap, and biodiversity protection through comprehensive environmental impact assessments across power infrastructure projects.

Resource:

- TNFD PT PLN Report 2024 <https://web.pln.co.id/statics/uploads/2025/07/PLN-TNFD-Report-2024.pdf>

Indicator Data

Headline Indicator 15.1 Number of companies disclosing their biodiversity-related risks, dependencies and impacts

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
15.1 Number of companies disclosing their biodiversity-related risks, dependencies and impacts	Reporting Mechanism	Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2024	Number	312	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2023	Number	275	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2022	Number	221	

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2021	Number	233	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2020	Number	157	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2019	Number	200	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2018	Number	175	
	Reporting Mechanism	Sustainability reporting to the Financial Services Authority (OJK)	2024	Number	959	
		Sustainability reporting to the Financial Services Authority (OJK)	2023	Number	917	
		Sustainability reporting to the Financial Services Authority (OJK)	2022	Number	724	
		Sustainability reporting to the Financial Services Authority (OJK)	2021	Number	505	

Binary Indicator 15.b Number of countries with legal, administrative, or policy measures aimed at encouraging and enabling businesses and financial institutions—particularly large and transnational companies and financial institutions—to progressively reduce their negative impacts on biodiversity, increase their positive impacts, reduce biodiversity-related risks, and promote actions that ensure sustainable patterns of production.

15.1 Has your country established legal, administrative, or policy measures to ensure that large and transnational companies and financial institutions monitor, assess, and transparently disclose their risks, dependencies, and impacts on biodiversity across their operations, supply and value chains, and portfolios?

Partially

15.2 Has your country established measures to ensure that large and transnational companies and financial institutions provide relevant information to consumers to promote sustainable consumption patterns?

Partially

15.3 Has your country established measures to ensure that large and transnational companies and financial institutions report on compliance with access and benefit-sharing regulations?

No

15.4 Has your country established measures to ensure that large and transnational companies and financial institutions progressively reduce their negative impacts on biodiversity and increase their positive impacts?

Partially

15.5 Does your country monitor whether negative impacts from business activities on biodiversity have progressively decreased?

No

Comments

15.3 In Indonesia, existing policies provide guidance on procedures for access to genetic resources; however, they do not yet explicitly require large and transnational companies or financial institutions to report on their compliance with Access and Benefit-Sharing (ABS) regulations.

15.5 While sustainability reporting obligations for issuers, financial institutions, and public companies are submitted to the Financial Services Authority (OJK), the analysis of the reported information has not yet systematically addressed the negative impacts of business activities on biodiversity.

National Indicator 18.a. Percentage of companies and financial institutions reporting on biodiversity and environmental management

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
18.a. Percentage of companies and financial institutions reporting on biodiversity and environmental management	Reporting Mechanism	Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2024	Percent	6.94	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2023	Percent	7.90	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2022	Percent	7.04	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2021	Percent	9.14	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2020	Percent	7.77	

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2019	Percent	9.94	
		Company Performance Rating Program in Environmental Management (PROPER) Gold and Green ratings	2018	Percent	9.35	

Note: This indicator is calculated as the percentage of companies attaining PROPER Gold and Green ratings relative to the total number of companies reporting under the PROPER program, multiplied by 100 percent *(Gold + Green) / Total companies reporting to PROPER × 100%*.

National Biodiversity Target 19

Substantive and Progressive Increase in Financial Support for the Effective, Efficient, and Transparent Implementation of IBSAP



KMGBF GOAL D

Invest and Collaborate



KMGBF Target 19



Sustainable Development Goals



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Main actions taken to implement the target

The implementation of National Biodiversity Target 19 focuses on strengthening biodiversity financing through improved institutional arrangements, increased resource mobilization, and more efficient use of available funds. Under the IBSAP 2025–2045, these efforts are structured in five action groups, as follows:

- 19.1 Strengthening institutional frameworks and policy instruments to enhance biodiversity-related financial flows;
- 19.2 Increasing international financial support for biodiversity management;
- 19.3 Increasing domestic financing and government expenditure for biodiversity management;
- 19.4 Developing innovative financing solutions, including private-sector engagement, blended finance mechanisms, and market-based financial instruments; and
- 19.5 Enhancing the efficiency, effectiveness, and transparency of biodiversity finance disbursement.



Summary of progress towards the target, including the main outcomes achieved

Effective biodiversity management requires adequate and sustainable financing. The estimated financing needs to implement 14 National Targets of the IBSAP 2025–2045 amount to IDR 70.7–75.5 trillion per year, while average national budget (*Anggaran Pendapatan dan Belanja Negara/APBN*) allocations for biodiversity management during 2020–2024 reached only IDR 8-10 trillion per year (Ministry of National Development Planning/National Development Planning Agency and UNDP BIOFIN, 2024). This substantial financing gap highlights the need to scale up and diversify biodiversity financing from domestic public, international public, and private sources. In addition, the Government is currently updating the Financial Needs Assessment covering all 20 national biodiversity targets.

To strengthen the identification and monitoring of biodiversity-related expenditures, the Government has developed a Biodiversity Budget Tagging (BBT) system that enables ministries and agencies to identify and track biodiversity-related spending. The BBT has been integrated into the National Planning and Budgeting Collaboration System (KRISNA), a unified digital platform jointly managed by the Ministry of National Development Planning, the Ministry of Finance, and the Ministry of Administrative and Bureaucratic Reform. This integration enhances coordination and transparency across government institutions, and its implementation is planned to be gradually extended to subnational governments to support a more comprehensive assessment of biodiversity financing.

To facilitate coordinated financing and enhance transparency, the Government of Indonesia established the Environmental Fund Management Agency (*Badan Pengelola Dana Lingkungan Hidup/BPDLH*) as the national fund management entity for environmental and biodiversity-related programs. Within this framework, the Indonesia Biodiversity Fund (IBioFund), formalized through [Minister of Forestry Decree No. 16/2025](#) on the Investment Framework for Sustainable Biodiversity Conservation Management, acts as a dedicated financing window. IBioFund serves as a blended-finance platform designed to attract and mobilize investments from public, private, and international partners, with a focus on bridging the biodiversity-financing gap through non-state budget (*non-APBN*) and non-tax revenue (*non-Penerimaan Negara Bukan Pajak/PNBP*) channels to support long-term conservation and restoration programs.

To complement domestic public financing, Indonesia has advanced the development of innovative and thematic financing instruments, including SDGs bonds and sukuk, green bonds, and blue bonds. Since 2021, thematic bond issuance has expanded significantly, including Asia's first SDGs Bond, which raised USD 584 million. The green bond market has also grown substantially, increasing from USD 49 million

in 2017 to USD 5.21 billion in 2022, while results-based financing instruments for marine ecosystem conservation have been introduced in collaboration with international partners.

Beyond public budget allocations and thematic bond issuance, biodiversity financing has been expanded through blended and alternative mechanisms. These include debt-for-nature swaps, which mobilized USD 35 million for coral reef conservation for the period 2024–2034, and ecological fiscal transfer schemes that allocate fiscal incentives based on ecological performance at the subnational level. Between 2019 and 2024, ecological fiscal transfers were implemented by 40 subnational governments, with total transfers amounting to IDR 389 billion. Faith-based financing mechanisms have also been utilized to support biodiversity-related programs.

Private-sector participation in biodiversity financing has increased through market-based instruments, including biodiversity credits and sustainability-linked financial products, supported by the national sustainable finance framework coordinated by the Financial Services Authority. This framework guides financial institutions in integrating environmental considerations into investment decisions and promotes transparency through sustainability and nature-related disclosures aligned with national priorities.

Research and innovation financing has also been a key component of National Target 19 implementation. Through the Research and Innovation Funding for Advanced Indonesia (RIIM) and the Collaborative Research Centers (*Pusat Kolaborasi Riset/PKR*), biodiversity research has been strengthened across multiple ecosystems. These schemes, which include competitive, expedition, start-up, collaboration, and invitation-based funding modalities, are supported by diverse sources such as the state budget (APBN), the Endowment Fund for Education (LPDP), and international funds. A centralized monitoring and evaluation system is applied to ensure accountability and the long-term sustainability of biodiversity research investments.

The implementation of National Target 19 involves multi-stakeholder collaboration across national and subnational levels. Key government actors include the Ministry of Finance (Kemenkeu), the Ministry of National Development Planning/National Development Planning Agency (Bappenas), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of Agriculture (Kementan), the Ministry of State-Owned Enterprises (Kementerian BUMN), the Ministry of Home Affairs (Kemendagri), and Local Governments (Provincial and City/Regency). Non-state actors that provided data and inputs for this report include the Wildlife Conservation Society, Yayasan Kehati, Konservasi Indonesia, and Biodiversity Warrior.

Main Outcomes Achieved

This target is assessed using three financing categories aligned with GBF Indicators D.1, D.2, and D.3 (Table 19.1), supported by two national indicators (19.a and 19.b). Overall progress under National Biodiversity Target 19 reflects strengthened institutional arrangements, improved identification and tracking of biodiversity-related public expenditure, and increased diversification of biodiversity financing sources.

Table 19.1. Biodiversity Expenditure Review, Data as of February 2026 (Ministry of National Development Planning and UNDP BIOFIN, 2026)

Funding Source	Cumulative 2017-2024 (Billion USD)	Annual (Billion USD)	Proportion
International Public Finance (GBF Indicator D.1)	1.7	0.2	17.0%
Official Bilateral Development Assistance	0.2	0.0	
Multilateral Development Banks (MDBs)	0.5	0.1	
Multilateral Development Institutions	0.7	0.1	
Global Funds	0.2	0.0*	
Research Institutions and Universities	0.0*	0.0*	
National Trust Funds	0.0*	0.0*	
Unclassified	0.0*	0.0*	
National Public Finance (GBF Indicator D.2)	7.6	1.0	77.0%
Central Government	4.1	0.6	
Provincial Government	2.2	0.3	
District and City Governments	1.2	0.2	
Domestic and International Private Finance (GBF Indicator D.3)	0.6	0.1	5.9%
Domestic Corporate Contributions	0.5	0.1	
International Corporate Contributions	0.0*	0.0*	
Domestic NGO Contributions	0.0*	0.0*	
International NGO Contributions	0.0*	0.0*	
International Philanthropic Institutions	0.0*	0.0*	
Domestic Philanthropic Institutions	0.0*	0.0*	
Total Pengeluaran Kehati	9.8	1.3	100%

*All values smaller than 0.0 Billion USD are shown as 0.0.

Headline Indicator D.1 – International Public Biodiversity Finance

International public biodiversity finance was compiled based on information from bilateral development partners, multilateral development banks, multilateral development institutions, global funds, research institutions, and relevant national institutions involved in managing external assistance. Available data on biodiversity-related grants and international support were consolidated and classified according to biodiversity relevance. The analysis indicates that international public finance averaged 0.2 billion USD per year, with a cumulative value of 1.7 billion USD for 2017–2024, accounting for approximately 17% of total identified biodiversity expenditure.

Headline Indicator D.2 – Domestic Public Biodiversity Finance; and National Indicator 19.a – Proportion of national budget allocation and expenditure for biodiversity management relative to total ministerial/agency expenditure in the State Budget (APBN)

Domestic public biodiversity finance was compiled from budget and expenditure information of the central government, provincial governments, and district/municipal governments. Biodiversity-related expenditures were identified using existing budget classification and tagging approaches and aggregated across levels

of government. Results show that domestic public finance represents the largest share of biodiversity funding, averaging 1 billion USD per year, with a cumulative total of 7.6 billion USD for 2017–2024. In 2024, biodiversity-related expenditure accounted for approximately 0.68% of total ministerial spending.

Headline Indicator D.3 – Private and Philanthropic Biodiversity Finance

Private and philanthropic biodiversity finance was compiled based on information from domestic and international companies, non-governmental organizations, and philanthropic institutions. Reported biodiversity-related expenditures were aggregated and classified according to national biodiversity priorities. The analysis identified average private and philanthropic biodiversity expenditure of 0.1 billion USD per year, with a cumulative value of 0.6 billion USD for 2017–2024, representing approximately 5.9% of total identified biodiversity expenditure. These figures represent minimum estimates due to limitations in data availability and voluntary disclosure.

National Indicator 19.b – Percentage of innovative financing proposals that have been followed up

Assessment of this indicator is currently ongoing. The development of innovative biodiversity financing mechanisms will be strengthened through the formulation of a Biodiversity Finance Plan, which is currently under preparation and is targeted for completion by mid-2026. The Biodiversity Finance Plan is expected to provide a strategic framework for identifying, prioritizing, and operationalizing innovative financing proposals, including blended finance, biodiversity-related fiscal instruments, and private sector engagement.

Summary of key challenges encountered and different approaches that may be taken for further implementation

1. Policy and Institutional Frameworks
- Policy and institutional frameworks for biodiversity financing are in place, but further refinement is needed to strengthen financial flows and improve overall effectiveness. Existing policies have not yet fully enabled innovative financing approaches or sufficiently encouraged private-sector participation. Coordination across institutions involved in planning, budgeting, and implementation can also be further strengthened. Going forward, efforts will focus on reinforcing policy coherence and institutional arrangements, including the development of clearer incentives and disincentives to guide activities with positive or negative impacts on biodiversity.
2. Financial Resources and Funding Composition
- Public funding continues to play a central role in supporting biodiversity management, demonstrating strong government leadership. However, reliance on public budgets alone can limit the scale and continuity of financing, particularly in the context of competing development priorities. This underscores the need to complement public funding with additional sources. Future efforts will emphasize the development of innovative financing solutions and the expansion of funding through emerging opportunities, including the bioeconomy, while continuing to improve the effectiveness of public expenditure.
3. Stakeholder Engagement
- The importance of private-sector and non-government engagement in biodiversity financing is increasingly recognized, but participation remains limited. Key challenges include limited incentives, unfamiliarity with biodiversity financing mechanisms, and perceived investment risks. In addition, access to international financing can be constrained by technical and institutional requirements. Moving forward, actions will focus on increasing private-sector participation through blended finance

schemes, strengthening partnerships with non-state actors, and improving access to international funding sources, including the Global Biodiversity Framework Fund, supported by enhanced institutional capacity and collaboration.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

One of Indonesia's recent best practices in innovative biodiversity financing is the debt-for-nature swap agreement with the United States, valued at USD 35 million, agreed in July 2024 and finalized in January 2025. The scheme converts sovereign debt into long-term conservation funding, channelled as grants through a multi-stakeholder partnership involving the Ministry of Marine Affairs and Fisheries, the Ministry of Finance, and national and international conservation organizations. This approach reflects a well-established financing model in the literature, which emphasizes debt swaps as a means to secure predictable funding while aligning conservation outcomes with national development priorities.

The funds support coral reef conservation and restoration and the strengthening of sustainable livelihoods for coastal communities in priority marine areas, including the Bird's Head, Lesser Sunda, and Banda Seascapes. Building on earlier debt-for-nature swaps, such as the 2009 agreement supporting forest conservation in Sumatra, this initiative demonstrates Indonesia's continued commitment to scaling innovative, partnership-based financing mechanisms for biodiversity conservation, particularly in marine and coastal ecosystems.

Sources:

- Government of Indonesia and United States Government. Debt-for-Nature Swap Agreement (2024–2025).
- Ministry of Marine Affairs and Fisheries (KKP). Official communications and program documentation.
- Conservation International; The Nature Conservancy; Yayasan Konservasi Alam Nusantara (YKAN); Yayasan Konservasi Cakrawala Indonesia (YKCI).
- World Bank & WWF literature on debt-for-nature swaps and innovative biodiversity financing.

Indicator Data

Headline Indicator D.1 International public funding, including official development assistance for conservation and sustainable use of biodiversity and ecosystems

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
D.1 International public funding, including official development assistance for conservation and sustainable use of biodiversity and ecosystems	Funding Source	Official Bilateral Development Assistance	2024	Billion USD	0.2	Cumulative 2017-2024
		Multilateral Development Banks	2024	Billion USD	0.5	Cumulative 2017-2024

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
		Multilateral Development Institutions	2024	Billion USD	0.7	Cumulative 2017-2024
		Global Funds	2024	Billion USD	0.2	Cumulative 2017-2024
		Research Institutions and Universities	2024	Billion USD	0	Cumulative 2017-2024 (* <0.01 Billion USD)
		National Trust Funds	2024	Billion USD	0	Cumulative 2017-2024 (* <0.01 Billion USD)
		Unclassified	2024	Billion USD	0	Cumulative 2017-2024 (* <0.01 Billion USD)

International public biodiversity finance was compiled from bilateral and multilateral development partners, global funds, research institutions, and relevant national institutions. Based on available data, international public finance for biodiversity averaged 0.2 million USD per year, totalling 1.7 million USD for 2017–2024, accounting for approximately 17% of total identified biodiversity expenditure. This financing has supported a range of biodiversity conservation and capacity-building initiatives across sectors.

Headline indicator D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems	Funding Source	Central Government	2024	Billion USD	4.1	Cumulative 2017-2024
		Provincial Governments	2024	Billion USD	2.2	Cumulative 2017-2024
		City and Regency Governments	2024	Billion USD	1.2	Cumulative 2017-2024

Domestic public biodiversity finance was aggregated from budget and expenditure data of central, provincial, and district/municipal governments using existing budget classification and tagging approaches. Domestic public finance accounts for the largest share of biodiversity funding, averaging 1 million USD per year and totalling 7.6 million USD for 2017–2024, equivalent to 77% of total identified biodiversity expenditure; central government expenditure remains dominant.

Headline Indicator D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems	Funding Source	Domestic Corporate Contributions	2024	Billion USD	0.5	Cumulative 2017-2024
		International Corporate Contributions	2024	Billion USD	0	Cumulative 2017-2025 (* <0.01 Billion USD)
		Domestic NGO Contributions	2024	Billion USD	0	Cumulative 2017-2025 (* <0.01 Billion USD)
		International NGO Contributions	2024	Billion USD	0	Cumulative 2017-2025 (* <0.01 Billion USD)
		International Philanthropic Institutions	2024	Billion USD	0	Cumulative 2017-2025 (* <0.01 Billion USD)
		Domestic Philanthropic Institutions	2024	Billion USD	0	Cumulative 2017-2025 (* <0.01 Billion USD)

Private and philanthropic biodiversity finance was compiled from reported expenditures by domestic and international companies, non-governmental organizations, and philanthropic institutions. The analysis indicates an average annual contribution of 0.1 million USD, totalling 0.6 million USD for 2017–2024, representing approximately 5.9% of the total identified biodiversity expenditure. These figures should be considered minimum estimates due to data limitations and the voluntary nature of reporting.

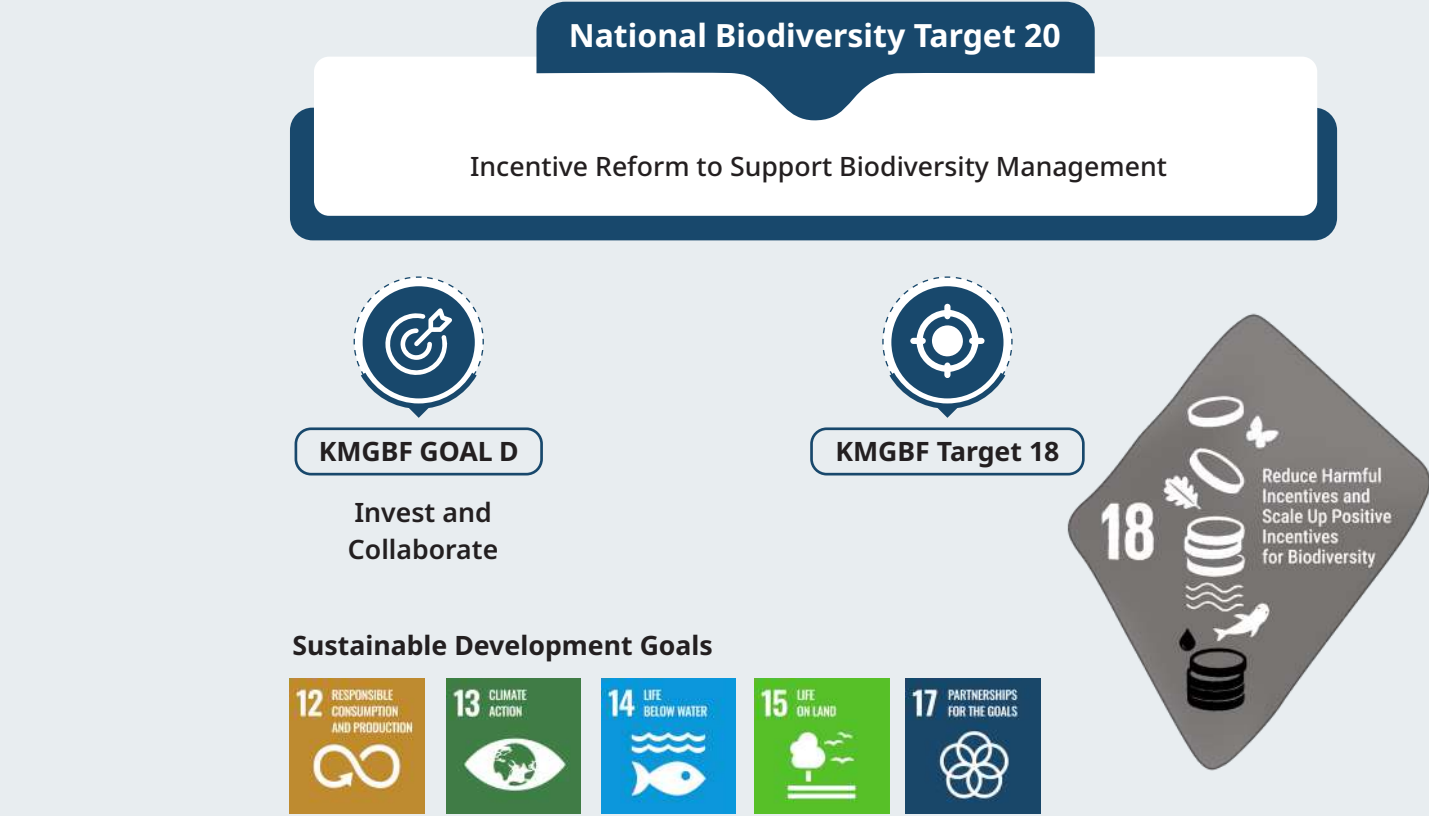
National Indicator 19.a. Proportion of national budget allocation and expenditure for biodiversity management relative to total ministerial/agency expenditure in the State Budget (APBN)

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
19.a. Proportion of national budget allocation and expenditure for biodiversity management relative to total ministerial/agency expenditure in the State Budget (APBN)	Funding Source	Central Government	2024	Percent	0.68	In 2024, biodiversity-related expenditure accounted for approximately 0.68% of total ministerial spending.

National Indicator 19.b. Percentage of innovative financing proposals that have been followed up

- *No data available*
- Assessment of this indicator is currently ongoing. The development of innovative biodiversity financing mechanisms will be strengthened through the formulation of a Biodiversity Finance Plan, which is currently under preparation and is targeted for completion by mid-2026. The Biodiversity Finance Plan is expected to provide a strategic framework for identifying, prioritizing, and operationalizing innovative financing proposals, including blended finance, biodiversity-related fiscal instruments, and private sector engagement.



Main actions taken to implement the target

The implementation of National Biodiversity Target 20 focuses on incentive reform to support biodiversity management, to encourage activities that generate positive biodiversity outcomes and reduce incentives that may contribute to biodiversity loss. Under the IBSAP 2025–2045, these efforts are organized under one action group, as follows:

20.1 Development of incentives related to biodiversity management

Summary of progress towards the target, including the main outcomes achieved

Indonesia has made steady progress in strengthening positive incentives to support biodiversity conservation and the sustainable use of natural resources. Incentive-based approaches are guided by [Government Regulation No. 46/2017](#) on Environmental Economic Instruments, which provides a basis for the use of fiscal and non-fiscal economic instruments to integrate environmental and biodiversity considerations into development planning, fiscal policy, and economic decision-making. Through the application of incentive-based environmental economic instruments (*Instrumen Ekonomi Berbasis Insentif/IEBI*), environmental costs and benefits that were previously external to economic decision-making are increasingly taken into account, thereby influencing production, consumption, and investment decisions.

The incentive framework is further strengthened by [Law No. 32/2024](#) on the Conservation of Biological Natural Resources and Their Ecosystems, which recognizes conservation financing as a shared responsibility between national and subnational governments. The law encourages the provision of incentives and compensation for stakeholders contributing to ecosystem protection and sustainable use, reinforcing the integration of biodiversity objectives into fiscal, financial, and development planning systems.

The Government of Indonesia, supported by the UNDP–the Biodiversity Finance Initiative (BIOFIN), conducted a national Study on Positive Incentives to support evidence-based policy implementation. The study examined existing incentive mechanisms under the IEBI framework, including their definitions, institutional arrangements, monetary values, beneficiaries, and implementation challenges, while identifying opportunities to enhance effectiveness and alignment with biodiversity objectives. In this assessment, an instrument is considered a positive incentive for biodiversity when it encourages behavior that supports conservation and protection outcomes, either by providing benefits to stakeholders engaged in conservation activities or by imposing costs on activities that degrade biodiversity. The incentive instruments are grouped into fiscal and non-fiscal categories, reflecting the range of economic mechanisms currently applied to influence behavior and support biodiversity-friendly practices (**Figure 20.1**).

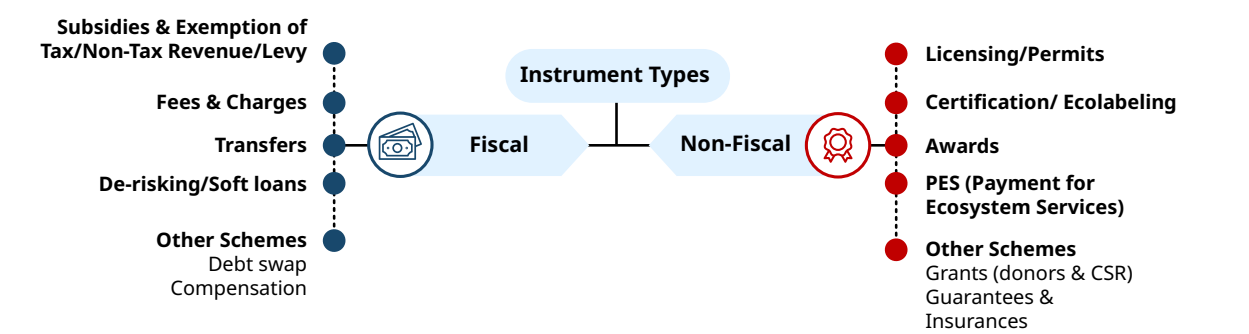


Figure 20.1. Fiscal and non-fiscal incentive instruments

Fiscal incentives have supported biodiversity-related outcomes across multiple ecosystems. In terrestrial and freshwater systems, ecological fiscal transfers, reforestation funds, and revolving fund financing facilities have encouraged forest protection, watershed management, and the rehabilitation of degraded land. In the agricultural sector, targeted subsidies, concessional financing, and risk-sharing mechanisms, such as agricultural credit schemes, crop and livestock insurance, and support for organic and low-emission farming, have promoted more sustainable and biodiversity-friendly production practices while reducing risks for smallholders.

Non-fiscal instruments comprise a range of market-based and institutional mechanisms, including tradable permits, certification and ecolabelling systems, payment for environmental services, environmental insurance and guarantee schemes, and other incentive arrangements such as donor- and CSR-supported grants. These instruments do not involve direct financial transfers, but instead operate by creating an enabling environment through regulatory facilitation, streamlined and accelerated permitting, and the provision of supporting infrastructure and services for actors that adopt sustainability principles. Through these mechanisms, non-fiscal incentives aim to improve competitiveness, strengthen the green investment climate, and encourage innovation in sectors with high potential to deliver positive biodiversity outcomes.

Market-based incentives have expanded notably through certification and ecolabelling schemes in forestry, agriculture, fisheries, and industry. A range of national certification and ecolabel instruments has been identified, including government-recognized schemes, instruments embedded within Indonesian National Standards (*Standar Nasional Indonesia/SNI*), private ecolabel initiatives, and environmental performance awards. These mechanisms enhance market recognition of sustainability performance, improve consumer trust, and reduce pressure on ecosystems while supporting community livelihoods.

In coastal and marine ecosystems, positive incentives have focused on promoting sustainable fisheries and responsible aquaculture. Certification and quality assurance mechanisms, including food safety and sustainability standards for fisheries products, have strengthened compliance with international market requirements. Community-based payment schemes for mangrove restoration and coastal protection have provided financial motivation for local stewardship, while environmental fees and penalties have begun to internalize ecological costs associated with marine resource use.

Progress towards this target has been supported through coordinated actions across multiple government institutions. Key contributing ministries and agencies include the Ministry of Finance (Kemenkeu), the Ministry of National Development Planning/National Development Planning Agency (Bappenas), the Ministry of Environment (KLH/BPLH), the Ministry of Forestry (Kemenhut), the Ministry of Agriculture (Kementan), the Ministry of Marine Affairs and Fisheries (KKP), the Ministry of State-Owned Enterprises (Kementerian BUMN), the Ministry of Trade (Kemendag), the Ministry of Industry (Kemenperin), the Ministry of Home Affairs (Kemendagri), the National Research and Innovation Agency (BRIN), the Financial Services Authority (OJK). Non-state actors that provided supporting data and information for this report include Konservasi Indonesia and Wildlife Conservation Society - Indonesia Program and Konservasi Indonesia.

Main outcome achieved

Headline Indicator 18.1 – Positive incentives in place to promote biodiversity conservation and sustainable use; and

National Indicator 20.a – Number of implemented policies providing positive incentives for biodiversity

Based on the Study on Positive Incentives (2026), Indonesia has established a substantial set of positive incentive instruments to support biodiversity conservation and the sustainable use of natural resources. A total of 43 incentive instruments have been identified across fiscal and non-fiscal categories, implemented by various ministries and public institutions at the national level.

Fiscal instruments account for 44.2% (19 instruments) of the total, while non-fiscal instruments represent 55.8% (24 instruments) (**Figure 20.2**). This distribution reflects a relatively balanced application of budgetary, financial, regulatory, and market-based approaches in encouraging biodiversity-positive behavior across sectors.

In terms of sectoral coverage, the majority of identified incentive instruments are directed toward the forestry sector, followed by the marine and fisheries sector, reflecting national priorities related to forest conservation, ecosystem restoration, and sustainable marine and fisheries management. Incentives are also distributed across other key sectors, including agriculture, plantations, and livestock, as well as industry and manufacturing, and other cross-sectoral biodiversity-relevant economic activities

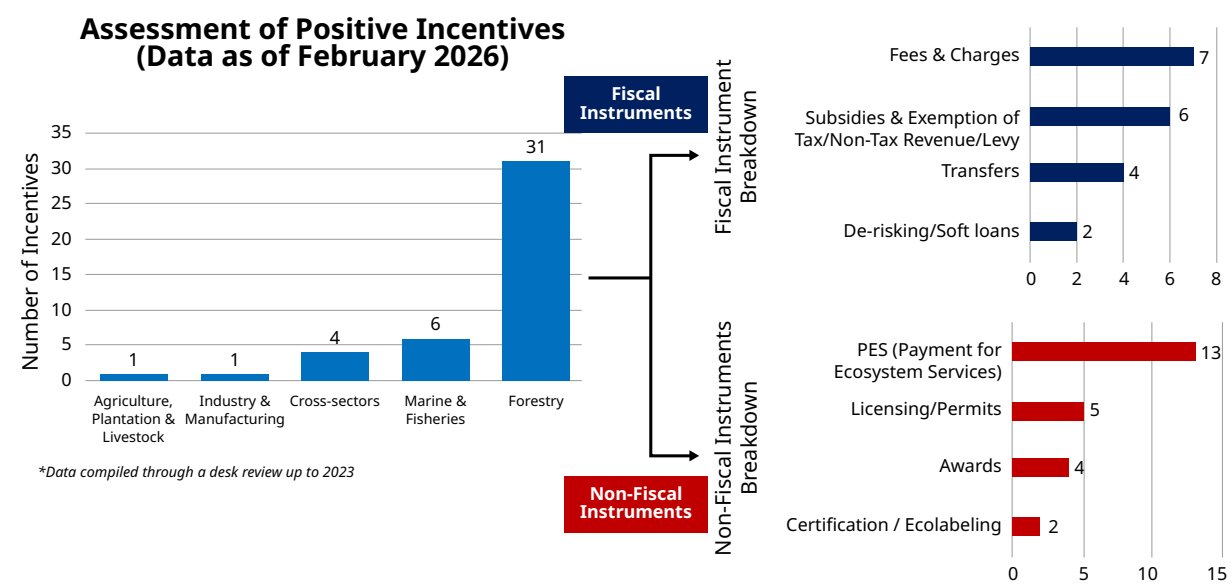


Figure 20.2. Study on Positive Incentives (Ministry of National Development Planning and UNDP BIOFIN, 2026)

Summary of key challenges encountered and different approaches that may be taken for further implementation

- 1. Policy and Regulation**
The implementation of positive incentive instruments continues to face trade-offs between revenue objectives and the prevention of environmentally harmful behavior. In addition, several incentive mechanisms remain supported by regulatory frameworks that are still under development, which may affect legal clarity and consistency across sectors. Going forward, strengthening policy coherence through the alignment of incentive design with long-term biodiversity and sustainability objectives, alongside the continued harmonization of regulatory frameworks, will help ensure that positive incentives consistently support conservation outcomes.
- 2. Institutional**
Differences in sectoral priorities and institutional mandates among ministries and agencies have posed challenges for coordinated implementation of positive incentives. These differences can affect coherence and overall effectiveness. Strengthening inter-ministerial coordination through clearer role delineation, enhanced cross-sectoral coordination platforms, and joint planning processes will support more integrated design, implementation, and monitoring of incentive instruments across levels of government.

- 3. Financial Arrangement**
Although a range of incentive instruments is in place, their effectiveness is sometimes constrained by fragmented financing arrangements and limited linkage between incentive allocation and measurable biodiversity outcomes. Improving the targeting and scaling of financial incentives by strengthening links to biodiversity performance and conservation results, as well as enhancing fiscal integration and the use of blended finance approaches, will contribute to more efficient and sustainable incentive implementation.

Examples or cases to illustrate the effectiveness of the actions taken to implement the target

The KOMPAK initiative

The [KOMPAK initiative](#) (Community Groups for Conservation/ *Kelompok Masyarakat Penggerak Konservasi*) implemented by the Ministry of Marine Affairs and Fisheries represents a best practice in the application of positive incentives for biodiversity conservation. The initiative has been implemented over multiple years to support community groups engaged in coastal and marine conservation, both within and outside formally designated marine protected areas, recognizing the role of local communities as key stewards of marine and coastal ecosystems across broader seascapes.

Through the provision of conservation assistance and accompanying facilitation, KOMPAK encourages local communities to undertake conservation actions such as ecosystem restoration, species protection, and sustainable resource management. The initiative also supports the development of nature-based activities, including ecotourism, which create alternative and sustainable livelihood opportunities. These activities have contributed to local employment in areas such as tour guiding services, community-based accommodation, and local transportation, while strengthening community involvement in conservation programmes such as habitat rehabilitation and ecosystem recovery.

KOMPAK provides cash and in-kind incentives to community groups undertaking activities related to the protection, conservation, and/or sustainable use of conservation areas and threatened or protected fish species. By reducing financial and operational barriers and linking conservation actions with tangible social and economic benefits, the initiative promotes sustained pro-conservation behavior, strengthens community ownership of conservation outcomes, and enhances the resilience of coastal and marine ecosystems.

For the most recent implementation cycle, the delivery of KOMPAK assistance has been guided by the Decree of the Director General of Marine and Spatial Management [No. 71/2023](#) on the Technical Guidelines for the Distribution of Conservation Assistance, which establishes operational procedures for assistance provision and accompanying facilitation to ensure effective use by beneficiary groups. KOMPAK assistance has been implemented across more than 30 provinces, reflecting wide national coverage, with annual variations in the provision of assistance illustrated in **Figure 20.3**.

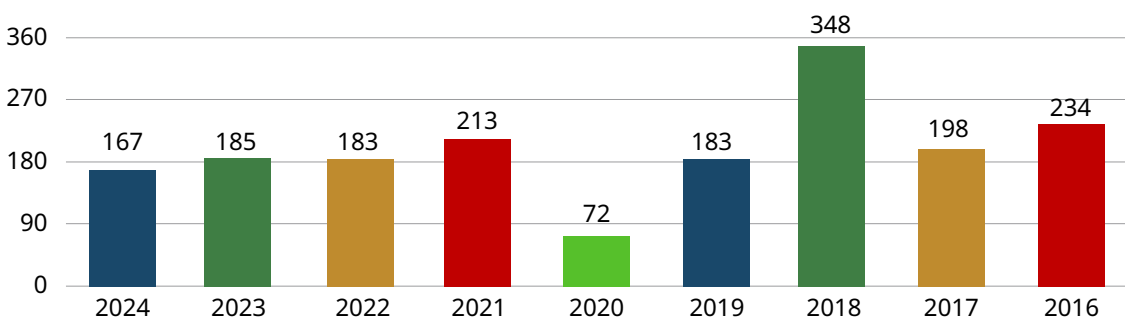


Figure 20.3. Trend in the number of KOMPAK conservation assistance packages by year (2016–2024)

Indicator Data

Headline Indicator 18.1 Positive incentives in place to promote biodiversity conservation and sustainable use; and

National Indicator 20.a. Number of implemented policies providing positive incentives for biodiversity

Use national data set

Indicator	Disaggregation	Disaggregation type	Year	Unit	Value	Footnote
18.1 Positive incentives in place to promote biodiversity conservation and sustainable use	Fiscal Instrument	Subsidies & Exemption of Tax/Non-Tax Revenue/Levy	2023	Number	6	
		Fees & Charges	2023	Number	7	
		Transfers	2023	Number	4	
		De-risking/Soft Loans	2023	Number	2	
		Licensing/Permits	2023	Number	5	
		Certification/Ecolabeling	2023	Number	2	
		Awards	2023	Number	4	
	Non-Fiscal Instrument	Payment for Ecosystem Services	2023	Number	13	

Headline Indicator 18.2 Value of subsidies and other incentives harmful to biodiversity

- Not relevant
- In Indonesia, subsidies are implemented as government support programmes aimed at assisting priority groups and sectors, and their design and implementation are subject to policy considerations intended to minimize potential adverse environmental and social impacts.



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SECTION

**Assessment of
national progress
contributing to
the goals of the
Kunming-Montreal
Global Biodiversity
Framework**



Assessment of national progress contributing to the goals of the Kunming-Montreal Global Biodiversity Framework



KMGBF Goal A: Ecosystems are conserved, extinctions are halted and genetic diversity is maintained



Summary of national progress contributing to the global goals

Indonesia translates Goal A of the Kunming-Montreal Global Biodiversity Framework into National Goal 1: Protect and Restore. Strengthening ecosystem integration and resilience in biodiversity management, reducing the risk of species extinction, and maintaining genetic diversity are addressed through seven National Biodiversity Targets (NBT 1 – 7).

Goal A comprises four headline indicators that Indonesia cannot yet fully report in the seventh National Report. This reflects, among other considerations, Indonesia's unique characteristics as a megadiversity country with a vast archipelagic geography and exceptionally high biodiversity at the ecosystem, species, and genetic levels, which necessitate a phased and progressive approach for implementation, monitoring, and reporting.



Indicator Data

Headline Indicator A.1 Red List of Ecosystems

Headline Indicator A.1 is not yet applicable, as Indonesia is currently in the process of identifying and classifying its natural ecosystems. Despite this, Indonesia has made substantial progress toward Goal A overall by expanding the coverage and effectiveness of protected and conserved areas, strengthening conservation efforts for species and genetic diversity, and establishing robust legal and institutional frameworks for biodiversity management. Conservation and preservation areas now cover more than 52 million ha across terrestrial and marine ecosystems, supported by improved management effectiveness and recognition of Other Effective Area-Based Conservation Measures (OECMs). Targeted species conservation actions, the advancement of national Red List Assessments, strengthened genetic resource conservation, and reinforced invasive alien species management collectively demonstrate Indonesia's commitment to halting biodiversity loss, while building a strong foundation for achieving Goal A by 2030.

Indonesia has significantly expanded ecosystem conservation through the designation of protected areas and preservation areas, which are equivalent to OECMs. As of 2024, conservation coverage across terrestrial and marine ecosystems reached approximately 52.3 million ha. This expansion is reinforced by Law No. 32/2024, which formally recognizes conservation beyond designated protected areas, including ecological corridors, High Conservation Value (HCV) areas, and community-managed landscapes. The management effectiveness is strengthened through the regular application of the Management Effectiveness Tracking Tool (METT) and the Evaluation of Conservation Area Management Effectiveness (*Evaluasi Efektivitas Pengelolaan Kawasan Konservasi/EVIKA*), which support adaptive and accountable ecosystem governance.

Invasive Alien Species (IAS) management represents another key achievement contributing to Goal A. Indonesia has established a robust legal and institutional framework for prevention, risk analysis, and control, supported by quarantine laws and risk-based species assessments. By 2024, 34 priority plant IAS had been identified for management, with ecosystem restoration actions implemented in several national parks. For aquatic biota, six harmful and 75 detrimental fish species have been designated and prioritized for control to prevent their spread. While data gaps remain for comprehensive trend analysis, these measures demonstrate concrete progress in reducing pressures on native ecosystems and species.

Headline Indicator A.2 Extent of natural ecosystems

For Indicator A.2, Indonesia requires an in-depth analysis to determine which ecosystem types can be classified as natural ecosystems for reporting purposes. This is particularly important due to differences between the definition adopted in national regulations and the interpretation applied at the global level. Under Indonesia's prevailing legal framework, ecosystems resulting from rehabilitation or restoration are generally not categorized as natural ecosystems, whereas the global interpretation of the indicator may accommodate restored ecosystems within the broader definition of natural ecosystems. This definitional divergence affects the scope and calculation of the indicator and, at this stage, has constrained Indonesia's ability to fully align with its reporting requirements.

Headline Indicator A.3 Red List Index

The Headline Indicator A.3 is not yet applicable, as Indonesia is still in the process of developing its National Red List Index. However, species conservation efforts are on track under National Biodiversity Target 4. Indonesia has adopted a prioritization approach to address its exceptionally high species diversity, supported by the development and implementation of Species Conservation Action Plans (*Strategi dan Rencana Aksi Konservasi/SRAKs*) and National Action Plans (*Rencana Aksi Nasional/RANs*) for priority terrestrial and aquatic species. National Red List assessments have progressed for several key taxa, including endemic mammals, birds, orchids, and primates, laying the groundwork for a future National Red List Index.

Indonesia is advancing species conservation through a structured prioritization approach, recognizing the challenges posed by its vast geographic scale and exceptionally high species diversity. National Red List assessments have been completed for 11 Macaca species, 1 banteng species, 3 endemic Sulawesi wild pig species, 542 endemic bird species, and 120 endemic orchid species, with further assessments planned for amphibians and molluscs. While a national Red List Index is still under development, interim reporting based on global IUCN assessments indicates Red List Index values ranging from 0.75 to 0.78, with a national calculation of 0.90 for all assessed species and 0.83 for endemic species, reflecting ongoing national efforts to strengthen species conservation and reduce extinction risk.

Headline Indicator A.4 Proportion of populations within species with an effective population size greater than 500

While Indonesia is not yet able to fully report on this headline indicator, a number of concrete efforts have already been undertaken. These include strengthening the conservation of genetic diversity, particularly for domesticated species, through the development of germplasm systems, livestock breeding units, and genetic conservation banks. As of 2025, 120 livestock breeds have been conserved and registered in FAO's Domestic Animal Diversity Information System (DAD-IS), supported by 20 artificial insemination centers and one livestock embryo center functioning as national genetic conservation facilities. In addition, 120 livestock breeds were officially protected between 2010 and 2025, while 802 plant varieties were protected between 2020 and 2025, consisting of 213 food crop varieties, 519 horticultural varieties, and 70 plantation crop varieties. These efforts contribute to food security, climate resilience, and sustainable production systems, while supporting the maintenance of effective population sizes and the long-term safeguarding of genetic diversity.



KMGBF Goal B: Biodiversity is sustainably used, and its contributions to people are maintained, enhanced or restored

Summary of national progress contributing to the global goals

Indonesia considers biodiversity as a fundamental asset for sustainable development, playing a critical role in supporting human well-being, now and for future generations. Goal B of the Kunming–Montreal Global Biodiversity Framework is translated into National Goal 2: Optimizing the sustainable use of biodiversity for society and future generations. This goal is implemented through National Biodiversity Targets 8, 9, 10, 11, 13, and 14.

Indicator Data

Headline Indicator B.1 Services provided by ecosystems

Headline Indicator B.1 applies the System of Environmental-Economic Accounting (SEEA), which is currently under development by Statistics Indonesia (BPS) in collaboration with the United Nations Statistics Division (UNSD). The associated technical guidelines and methodologies are expected to be operationalized starting in 2026.

In the Seventh National Report, Indonesia reports progress in ecosystem services within the forestry sector, including nature-based tourism services, hydrological services, carbon management services, geothermal services, and biodiversity-related ecosystem services. Non-Tax State Revenue (Penerimaan Negara Bukan Pajak/PNBP) from ecosystem services has increased markedly, rising from IDR 53.81 billion in 2020 to IDR 206.1 billion in 2024.

Binary Indicator B.b Number of countries with policies or actions for implementing and monitoring the sustainable use of biodiversity and the maintenance and enhancement of nature's contributions to people, including ecosystem functions and services

Headline Indicator B.b is a binary indicator that identifies whether a country has policies or actions in place to monitor the sustainable use of biodiversity and the maintenance and enhancement of nature's contributions to people, including ecosystem functions and services. Indonesia has established the necessary policies and action plans to support the sustainable use of biodiversity, including measures that emphasize the conservation of coastal and terrestrial ecosystems (including inland waters), the protection of genetic resources for crops and livestock, and the application of ecosystem-based approaches in land and marine spatial planning.

Key challenges remain, particularly the lack of a fully developed, integrated monitoring system and the limited incorporation of monitoring results into decision-making. To address these challenges, Indonesia is prioritizing the transition to the SEEA, while simultaneously harmonizing methodologies, developing standardized indicators, and strengthening biodiversity data collection at both national and subnational levels.



KMGBF Goal C: Benefits from the use of genetic resources are shared and substantially increased

Summary of national progress contributing to the global goals

Alongside Goal B, Goal C of the Kunming–Montreal Global Biodiversity Framework is translated into National Goal 2 and implemented through National Biodiversity Target 12. The associated headline indicators (C.1 and C.2), as well as the corresponding national indicators, are currently under development, and standardized methodologies are still being finalized.

Indicator Data

Headline Indicator C.1 Monetary benefits received in accordance with applicable internationally agreed access and benefit-sharing instruments

Indonesia has strengthened its policy and institutional framework for access and benefit-sharing from the utilization of genetic resources and its associated traditional knowledge, in line with national legislation and international commitments.

Progress has been made in identifying economic benefits derived from the utilization of genetic resources, particularly in the agricultural sector. In 2024, sales generated from access to genetic resources reached IDR 251.8 billion, with corresponding royalty revenues of IDR 5.7 billion, based on intellectual property outputs such as patents, plant variety protection, and related rights. Data on monetary benefits from genetic resource utilization remain fragmented across sectors, and current estimates likely underestimate total values, as information from non-agricultural sectors has not yet been fully consolidated. Thus, Indonesia is developing an integrated system to harmonize and consolidate data across sectors.

Headline Indicator C.2 Non-monetary benefits arising from applicable international access and benefit-sharing instruments

Indonesia recognizes the importance of customary and local communities' traditional knowledge in biodiversity conservation and sustainable use. Progress under Indicator C.2 has been achieved through the operationalization of access permits for genetic resources. As of 2024, 231 access permits for terrestrial wildlife genetic resources have been issued in compliance with the Mutually Agreed Terms (MAT) and Free Prior and Informed Consent (FPIC) requirements. Indonesia has also strengthened inclusive ABS implementation, with 95 customary communities and 7 local communities supported through 107 FPIC agreements. In the agricultural sector, 203 genetic resources (120 livestock breeds/lines and 83 crop varieties) have been accessed and utilized, alongside the documentation of Digital Sequence Information (DSI) in the national database. Private sector engagement has expanded, with eight companies participating in regulated genetic resource utilization. While legal recognition and policy frameworks are in place, practical mechanisms for documenting, protecting, and sharing benefits from genetic resources and traditional knowledge remain under development. Indonesia is prioritizing strengthening institutional management, standardizing ABS procedures, enhancing DSI systems, and expanding the participation of customary and local communities. These efforts are complemented by the development of sustainability standards across the forestry, agriculture, and fisheries sectors, which support a more coherent and inclusive benefit-sharing framework.

Binary Indicator 13.b Number of countries that have taken effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits from the utilization of genetic resources and from digital sequence information on genetic resources, as well as traditional knowledge associated with genetic resources

Indonesia has established certain legal, administrative, and policy measures related to the fair and equitable sharing of benefits arising from the utilization of genetic resources; however, these measures are not yet fully comprehensive, and implementation remains partial. Capacity-building measures to support the effective implementation of benefit-sharing mechanisms are currently under development.

Administrative, policy, or legislative measures related to the operationalization of the multilateral mechanism under Decision 16/2 have not yet been adopted. Monitoring systems for monetary benefits derived from the utilization of genetic resources and associated traditional knowledge accessed from Indonesia are not yet in place. Monitoring of non-monetary benefits, such as technology transfer, training, or research collaboration, is conducted to a limited extent.

In addition, measures related to benefit-sharing arising from the utilization of genetic resources or associated traditional knowledge accessed from other countries exist in part but are not yet fully developed.



KMGBF Goal D: The biodiversity funding gap of 700 billion USD is progressively closed by ensuring adequate means of implementation are available



Summary of national progress contributing to the global goals

Goal D is translated by Indonesia into National Goal 3: Strengthening biodiversity governance through enhanced science and technology, increased human resource capacity, strengthened financing, and improved regulatory and law enforcement frameworks. Indonesia recognizes that the implementation of biodiversity management must take into account national needs, capacities, and capabilities. Accordingly, management priorities are determined by available resources, including financial resources, policy frameworks, and existing institutional arrangements. Goal D is implemented through National Biodiversity Targets 15, 16, 17, 18, 19, and 20.



Indicator Data

Headline Indicator D.1 International public funding, including official development assistance for conservation and sustainable use of biodiversity and ecosystems

International public biodiversity finance was compiled from bilateral and multilateral development partners, global funds, research institutions, and relevant national institutions. Based on available data, international public finance for biodiversity averaged 0.2 billion USD per year, totalling 1.7 billion USD for 2017–2024, accounting for approximately 17% of total identified biodiversity expenditure. This financing has supported a range of biodiversity conservation and capacity-building initiatives across sectors.

Headline Indicator D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems

Domestic public biodiversity finance was aggregated from budget and expenditure data of central, provincial, and district/municipal governments using existing budget classification and tagging approaches. Domestic public finance accounts for the largest share of biodiversity funding, averaging 1 billion USD per year and totalling 7.6 billion USD for 2017–2024, equivalent to 77% of total identified biodiversity expenditure; central government expenditure remains dominant.

Headline Indicator D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems

Private and philanthropic biodiversity finance was compiled from reported expenditures by domestic and international companies, non-governmental organizations, and philanthropic institutions. The analysis indicates an average annual contribution of 0.1 billion USD, totaling 0.6 billion USD for 2017–2024, representing approximately 5.9% of the total identified biodiversity expenditure. These figures should be considered minimum estimates due to data limitations and the voluntary nature of reporting.



SECTION

Conclusions on the national implementation of the Convention on Biological Diversity and the Kunming-Montreal Global Biodiversity Framework

Conclusions on the national implementation of the Convention on Biological Diversity and the Kunming-Montreal Global Biodiversity Framework

Summary assessment of the implementation of the Convention and the Framework, including all its sections, and the main achievements and the major challenges encountered and, where applicable, resolved, in particular those related to capacity, technical, technological, institutional and financial gaps and constraints, and support provided for implementation.

Indonesia ratified the Convention on Biological Diversity (CBD) through Law No.5/1994 and has since developed successive Indonesia Biodiversity Strategy and Action Plan (IBSAP 2003–2020, 2015–2020, and 2025–2045). As part of its commitment to the global biodiversity agenda, Indonesia regularly submits National Reports to the CBD Secretariat to communicate progress, constraints, and key implementation challenges.

Over the past three decades, biodiversity has become increasingly central to Indonesia's sustainable development agenda, aligned with the CBD's vision of Living in Harmony with Nature, the Kunming-Montreal Global Biodiversity Framework (KMGBF), and Golden Indonesia 2045 (*Indonesia Emas 2045*), the national development vision marking 100 years of independence. In this context, the updated IBSAP 2025–2045 establishes 20 national biodiversity targets harmonized with the National Long-Term Development Plan (*Rencana Pembangunan Jangka Panjang Nasional/RPJPN 2025–2045*), the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional/RPJMN 2025–2029*), and the KMGBF. These targets support ecosystem integrity, species conservation, the sustainable use of biodiversity, and broader contributions to the Sustainable Development Goals (SDGs).

Through the implementation of IBSAP and its national biodiversity targets, Indonesia has made substantive progress in advancing the objectives of the CBD and the KMGBF, particularly with respect to biodiversity conservation, ecosystem management, and the control of key drivers of biodiversity loss. Implementation has been supported by a strengthened legal and policy framework, expanding conservation coverage, enhanced ecosystem-based management, and the growing integration of science-based tools. At the same time, Indonesia continues to face persistent challenges related to capacity, technology, financing, data availability, and cross-sectoral coordination that affect the pace and scale of implementation.

The Seventh National Report presents Indonesia's progress from 2018 to June 2025 in contributing to the KMGBF and the SDGs within this policy and institutional framework. The report was prepared through an inclusive, multi-stakeholder process involving ministries, government agencies, provincial and regency/city governments, and non-state actors, including civil society organizations (including those working with customary and local communities), academia, private sectors, and development partners, with specific efforts made to ensure the participation of youth and women.

A major achievement under IBSAP 2025–2045 and KMGBF is the strengthening of the national conservation framework through the enactment of Law No. 32/2024, which expands the scope of conservation beyond formally designated protected areas, so-called Preservation Areas (*Area Preservasi*). Conservation is now recognized in a broader range of spatial contexts, including buffer zones, ecological corridors, High Conservation Value (HCV) areas, community-managed conservation areas, and areas protected under customary and local governance systems. This approach enhances landscape- and seascape-level conservation and improves ecological connectivity.

In terrestrial ecosystems, Indonesia has reinforced the designation, management, and safeguarding of Nature Reserves (*Kawasan Suaka Alam*), Nature Conservation Areas (*Kawasan Pelestarian Alam*), and Game Reserves (*Taman Buru*). Ecosystem-specific management has been further strengthened, particularly for mangrove and peatland ecosystems. The establishment of Peat Hydrological Units (*Kesatuan Hidrologis Gambut*) has improved the maintenance of ecological functions critical for biodiversity conservation, climate regulation, and the provision of ecosystem services.

In marine and coastal areas, Indonesia has continued to implement the Marine Conservation Strategic Plan (2020–2024), which provides the policy foundation for expanding Marine Protected Areas (MPAs) toward the national target of protecting 30% of Indonesia's marine area by 2045. The expansion of protected mangrove areas and the conservation of coastal ecosystems contribute significantly to biodiversity protection, climate change adaptation, and disaster risk reduction.

To support effective spatial planning and science-based decision-making, Indonesia has issued guidelines for the Participatory Inventory and Verification of High-Biodiversity-Value Areas (2020–2024). These guidelines support biodiversity inventories within conservation zones and sustainable forest management areas, with a target coverage of 27 million ha, including terrestrial and marine conservation areas. Habitat suitability analyses, conducted in collaboration with universities, research institutions, and non-state actors, further support adaptive management. Field monitoring is strengthened through systems such as the Spatial Monitoring and Reporting Tool (SMART) Patrol, which provides data to inform management interventions. To assess the management effectiveness of conservation areas, Indonesia applies two main assessment tools: EVIKA (*Evaluasi Efektivitas Pengelolaan Kawasan Konservasi*) for marine conservation areas and the Management Effectiveness Tracking Tool (METT) for terrestrial protected areas. These tools are applied on a regular basis, and their results are used to support performance monitoring and to inform strategic planning within the respective ministries.

Regarding species conservation, Indonesia continues to prioritize threatened and endemic species through policy-based instruments, despite limitations in reporting certain global headline indicators. The development of a National Red List Index is ongoing and remains a national priority due to Indonesia's high species diversity and unique biogeographic context. Indonesia has implemented complementary measures, including Species Conservation Action Plans (*Strategi dan Rencana Aksi Konservasi/SRAK*). To date, 24 SRAK documents have been issued for terrestrial flora and fauna, including flagship species such as the Javan Gibbon, Orangutan, Malayan Tapir, Maleo, *Rafflesia arnoldi*, *Amarphophallus titanium*, and Flores Hawk-Eagle. For aquatic biodiversity, 12 National Action Plans (*Rencana Aksi Nasional/RAN*) have been developed, covering species and ecosystems such as whale sharks, sharks and rays, and dugong-seagrass habitats.

Indonesia has also established a robust legal and institutional framework to address Invasive Alien Species (IAS). Law No. 21/2019 on Animal, Fish, and Plant Quarantine and Government Regulation No. 29/2023 provide a comprehensive basis for preventing, detecting, and controlling biological invasions. These provisions are supported by sectoral regulations governing fisheries, forestry, and environmental management. Preventive measures include pre-border risk management, quarantine surveillance, and trade monitoring. The prohibition list for potentially invasive fish species has been revised based on updated risk assessments, and a national database tracks trade and movement trends. Risk analysis and capacity strengthening are central to IAS management, with 26 IAS risk analysis documents completed and approximately 34 priority IAS identified. These analyses inform ecosystem restoration efforts through Ecosystem Recovery Plans implemented in several conservation areas.

Pollution control has been reinforced through the Water Quality Index (*Indeks Kualitas Air*), which forms part of the Environmental Quality Index under the Minister of Environment Regulation No. 27/2021. A nationally standardized monitoring system, supported by more than 800 manual observation points and an expanding network of automated real-time monitoring stations (Onlimo), enables consistent assessment of inland water pollution and provides early warnings of pollution events across priority watersheds.

Indonesia continues to strengthen its access and benefit-sharing (ABS) framework in line with national legislation and international commitments. In 2024, utilization of genetic resources generated IDR 251.8 billion in sales and IDR 5.7 billion in royalties, primarily from patents and plant variety protection, although total economic values remain underestimated due to fragmented sectoral data, prompting the development of an integrated national database. Implementation progress is reflected in 231 access permits for terrestrial wildlife genetic resources in compliance with Mutually Agreed Terms (MAT) and Free, Prior and Informed Consent (FPIC); support to 95 customary and 7 local communities through 107 FPIC agreements; and the utilization of 203 agricultural genetic resources (120 livestock breeds/lines and 83 crop varieties), including documentation of Digital Sequence Information (DSI). Private sector participation has expanded to eight companies. Ongoing efforts focus on improving documentation, standardizing ABS procedures, strengthening DSI systems, enhancing institutional coordination, and promoting inclusive benefit-sharing through sustainability standards in forestry, agriculture, and fisheries.

In the production sectors, including forestry, agriculture, plantations, fisheries, aquaculture, and livestock, the Government has established and scaled up sustainability standards that directly operationalize KMGBF principles on sustainable use, reduction of negative impacts, and biodiversity mainstreaming. Instruments such as the Timber Legality Assurance System (*Sistem Verifikasi Legalitas Kayu/SVLK*), Sustainable Forest Management (*Pengelolaan Hutan Lestari/PHL*), Indonesian Sustainable Palm Oil (ISPO), Good Aquaculture Practices (*Cara Budidaya Ikan yang Baik/CBIB*), and national organic agriculture standards exemplify a systematic approach to aligning production systems with ecological limits. The breadth of implementation, reflected in thousands of certified enterprises and tens of millions of ha under regulated management, signals substantial progress toward KMGBF Targets related to sustainable use and responsible value chains. These standards are increasingly enforced through mandatory regulations where environmental risks are high, reinforcing state responsibility in safeguarding biodiversity rather than relying solely on voluntary market mechanisms.

Indonesia's precautionary approach to marine biodiversity, exemplified by the restriction and prohibition of lobster seed harvesting and export, represents a notable best practice under the KMGBF. By prioritizing the protection of early life stages, regulating access through quotas and traceability, and redirecting utilization toward domestic aquaculture, Indonesia has demonstrated how conservation objectives can be reconciled with livelihood considerations. This policy framework strengthens stock recovery, reduces illegal trade, and aligns fisheries governance with ecosystem-based management principles, contributing to long-term marine ecosystem resilience.

Knowledge generation, data availability, and transparency have emerged as critical enablers of biodiversity governance. Indonesia has made significant investments in sectoral biodiversity information systems, including those for forest fire monitoring, wildlife health, agricultural genomics, and marine spatial planning. The establishment of the Indonesia Biodiversity Clearing House Mechanism (*Balai Kliring Keanekaragaman Hayati Indonesia/BKKHI*) and its formal working group provides an institutional foundation for data integration. The progressive consolidation of scientific collections under the National Research and Innovation Agency (*Badan Riset dan Inovasi Nasional/BRIN*) marks an important step toward standardization. However, the persistence of fragmented systems highlights that data integration remains a work in progress. Accelerating interoperability and fostering cross-ministerial coordination will be essential for fully realizing KMGBF targets related to knowledge, monitoring, and evidence-based decision-making.

A defining strength of Indonesia's implementation lies in its commitment to inclusive and equitable biodiversity governance. Legal recognition of customary forests, social forestry schemes, customary community-managed conservation areas, and village-based stewardship programs demonstrates a clear shift toward rights-based and participatory conservation. The formal recognition of millions of ha of customary territories and the growing number of community-based conservation groups underscore the role of customary and local communities as custodians of biodiversity, rather than passive beneficiaries. These efforts are reinforced by gender mainstreaming policies and social inclusion frameworks that encourage the participation of women, youth, persons with disabilities, and other marginalized groups in biodiversity management. These approaches are consistent with the KMGBF's emphasis on equity, human rights, and intergenerational justice, enhancing the legitimacy and effectiveness of conservation outcomes.

Transparency and accountability in the private and financial sectors have been substantially strengthened through regulatory and market-based instruments. The Business Performance Rating on Environmental Management (*Program Penilaian Peringkat Kinerja Perusahaan/PROPER*) program has evolved into a robust mechanism that not only enforces environmental compliance but also incentivizes corporate innovation, habitat restoration, and biodiversity stewardship. Alignment with Environmental, Social, and Governance (ESG) principles has increased the relevance of biodiversity performance for investors and financial institutions. Complementary reforms led by the Financial Services Authority (*Otoritas Jasa Keuangan/OJK*), including sustainable finance regulations, sustainability reporting requirements, and the development of national sustainability disclosure standards, have embedded biodiversity considerations into financial decision-making. Indonesia's early engagement with nature-related financial disclosure initiatives further positions the country to operationalize KMGBF targets focused on reducing business-related biodiversity risks and impacts.

The valuation of ecosystem services and the integration of natural capital into policy and planning frameworks represent another area of substantive progress. Through environmental economic instruments, payment for ecosystem services schemes, carbon economic value mechanisms, and natural capital accounting, Indonesia has laid the groundwork for recognizing biodiversity as a productive asset that underpins national development. The use of ecosystem service maps in spatial planning strengthens safeguards against unsustainable land-use changes and supports more informed development decisions. These measures are essential for aligning economic incentives with conservation objectives, as outlined under the KMGBF.

The significant gap between the estimated financing needs for the Indonesia Biodiversity Strategy Action Plans (IBSAP) implementation and the current public budget allocations highlights the limits of conventional funding approaches. Indonesia's response by establishing the Environmental Fund Management Agency, operationalizing the Indonesia Biodiversity Fund, introducing biodiversity budget tagging, and scaling innovative instruments such as green and blue bonds, debt-for-nature swaps, and ecological fiscal transfers, demonstrates a strategic shift toward diversified and blended financing.

The recent debt-for-nature swap supporting coral reef conservation exemplifies how international cooperation, fiscal policy, and biodiversity outcomes can be mutually reinforcing. However, sustained political commitment and private-sector engagement will be required to ensure that these mechanisms deliver predictable, long-term finance at the scale required by the KMGBF. Overall, Indonesia's implementation of the KMGBF reflects a trajectory of consolidation and innovation. The country has established comprehensive policy frameworks, operational tools, and institutional arrangements that address conservation, sustainable use, equity, knowledge, transparency, and financing in an integrated manner. While challenges persist, particularly in data integration, coordination across governance levels, and closing the biodiversity financing gap, the progress achieved demonstrates Indonesia's capacity to translate global commitments into nationally grounded action. Continued strengthening of coherence among sectors, deeper engagement with non-state actors, and sustained investment in inclusive and evidence-based governance will be decisive in determining Indonesia's contribution to the global goal of halting and reversing biodiversity loss by 2030 and securing nature's benefits for present and future generations.

Despite these achievements, Indonesia faces several cross-cutting challenges that affect the full implementation of KMGBF. Human resource capacity remains a key constraint, particularly in terms of interdisciplinary expertise and the ability to engage actors beyond the traditional biodiversity sector, including energy, urban, infrastructure, and development planning sectors. Strengthening interministerial and inter-agency coordination remains essential to address complex, multi-sectoral drivers of biodiversity loss.

Technical and technological gaps also persist. Limited access to advanced monitoring technologies, data integration systems, and biodiversity information platforms constrains timely reporting and adaptive management. The development of national indicators, such as the National Red List Index and population-based metrics, requires sustained scientific investment, improved data availability, and long-term monitoring frameworks.

Access to timely, reliable data and knowledge sharing remains a critical issue. While initiatives have been implemented to improve data collection and biodiversity monitoring, gaps remain in data availability, particularly for species and ecosystems outside designated protected areas. Moreover, scientific expertise to support project development and management is still underdeveloped in some areas, especially for managing complex environmental challenges.

While progress has been substantial, the effective and timely implementation of the CBD and KMGBF remains influenced by several cross-cutting factors that require better inter-sectoral coordination. Additional challenges include pressures from land-use change, expansion of monoculture agriculture and forestry into non-designated areas, and reliance on a limited number of high-yielding crop varieties, which reduces genetic diversity. The limited development and utilization of local and indigenous varieties further constrain resilience and local food security.

Financial constraints continue to represent one of the most significant challenges. The significant gap between the estimated financing needs for IBSAP implementation and the current public budget allocations highlights the limitations of conventional funding approaches. Funding levels, particularly domestic resources for biodiversity conservation and sustainable use, remain below what is required to meet national and global targets. While innovative financing mechanisms and international support are being explored, scaling up predictable and sustainable financing remains critical, especially for conservation management, ecosystem restoration, and community-based initiatives.

Addressing these challenges will require sustained political commitment, strengthened institutional coordination, and scaled-up financing to ensure the effective implementation of the CBD and the full realization of the KMGBF in Indonesia.

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This report presents Indonesia's progress in implementing the Convention on Biological Diversity, highlighting policy developments, institutional strengthening, financing mechanisms, and multi-stakeholder collaboration to advance conservation and the sustainable use of biodiversity.

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