

# Leveraging Ecological Fiscal Transfers (TAKE) to Support Village-Level Implementation of the Sustainable Cocoa Development Roadmap in North Luwu

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## Key messages

- As type of the Ecological Fiscal Transfers (EFT), (TAKE= Transfer Anggaran Kabupaten Berbasis Ekologi or Ecology-Based District Budget Transfers) offer a strong opportunity to encourage environmental stewardship and foster sustainable development at the village level. Strengthening data availability, ensuring continuous support, and enhancing monitoring, evaluation and learning systems will further optimize program implementation and impact.
- Enhancing ecological understanding and public sector capacities will be key to developing effective performance indicators. The active engagement and leadership of all stakeholders are critical to successfully institutionalizing TAKE as part of the village fund allocation mechanism, serving as a learning model that can be applied to other EFT at the national and provincial levels.
- While TAKE can serve as a catalytic fund to support North Luwu's development plans, ensuring long-term sustainability will require proactive preparation by the local government, including strategies to engage the private sector in maintaining and scaling successful initiatives beyond public funding.
- Strategic collaboration, continuous capacity development, and adaptive management practices will play a pivotal role in advancing TAKE implementation in North Luwu. Emphasizing the sustainable management of local strategic commodities, such as cacao and sugar palm, alongside forest protection will help align environmental goals with economic development priorities, fostering long-term regional resilience.
- TAKE can serve as a crucial and sustainable source of funding for the implementation of the sustainable cocoa development roadmap. By allocating ecological-based budget transfers directly to district and village governments, TAKE ensures the availability of financial resources necessary to support key activities such as capacity development, infrastructure development, sustainable farming practices, and community empowerment. This financial mechanism strengthens the alignment of environmental conservation goals with economic growth, enabling villages to implement and sustain the roadmap's objectives effectively.

## Background

North Luwu, a district in South Sulawesi, Indonesia, is rich in natural resources, including vast forests, watersheds, and biodiversity that play a crucial role in maintaining ecological services. Its economy is predominantly driven by land-based sectors<sup>1</sup>, with agriculture, forestry, and fisheries consistently contributing over 40% to the region's GDP between 2019 and 2023. This prioritization reflects agroforestry's dual role in

strengthening environmental resilience while enhancing rural livelihoods, positioning it as a key pathway for sustainable village development. The plantation sub-sector, especially cocoa, plays a major role, making North Luwu one of the largest cocoa producers in the province.

However, economic growth has been accompanied by environmental challenges, deforestation and land degradation and unsustainable resource extraction have increased the risk of natural disasters such as flash floods and landslides. Climate change is expected to intensify these risks, threatening the livelihoods of communities dependent on land-based sectors.

<sup>1</sup> Badan Pusat Statistik Kabupaten Luwu Utara. (2023). Gross regional domestic product of North Luwu Regency by industry 2018-2022. BPS-Statistics of Luwu Utara Regency.



Recognizing the dual importance of environmental sustainability and strategic value of cocoa, the North Luwu District Government launched a Sustainable Cocoa Roadmap in 2024<sup>2</sup>. The roadmap outlines strategic direction and concrete actions to strengthen the resilience of cocoa sector while ensuring the long-term social, economic, and environmental benefits. One of the main barriers to achieving sustainable cocoa development in North Luwu is limited financial support and institutional capacity. While local fiscal resources are constrained, with public investments<sup>3</sup> tend to prioritize infrastructure and social services, often leaving environmental protection underfunded. As a result, while the environmental benefits are shared broadly, the economic costs are borne disproportionately at the local level, particularly by smallholder farmers. These constraints significantly hinder the implementation of the Sustainable Cocoa Roadmap, which demands long-term, coordinated investment across multiple fronts, including research and development (R&D), market facilitation, post-harvest infrastructure, and product certification through quality assurance and control (QA/QC) systems. The lack of funding in these key areas limits the ability of farmers and local actors to innovate, access premium markets, and meet sustainability standards.

To address this gap, North Luwu introduced an Ecological Fiscal Transfer (EFT)<sup>4</sup> scheme through Regent Regulations on Village Fund Allocation for 2023 and 2024. Despite this initiative, no formal monitoring or evaluation has been conducted since its rollout, highlighting the need to assess effectiveness, refine indicators, and align with emerging priorities such as sustainable landscape management.

<sup>2</sup> North Luwu Regent Regulation No 18/2018 on Sustainable Cocoa Roadmap 2024-2044

<sup>3</sup> Public investments referred to in this context include funds from the national (APBN) and regional (APBD) budgets.

<sup>4</sup> EFT is a policy mechanism that uses ecological indicators to allocate revenues to local governments, promoting environmental conservation and sustainable development (Camões et al., 2021). By integrating ecological indicators and performance into fiscal allocation decisions, EFT enables local government to strengthen environmental governance, sustainability, and community engagement at the village level.

In response, ICRAF Indonesia through Sustainable Farming in Asian Tropical Landscapes (SFITAL) collaborated with the North Luwu government to evaluate the initial EFT implementations and strengthen the EFT scheme for 2025. This collaboration aims to ensure that village fund allocations increasingly support resilience to climate change (UNFCCC, 2015), sustainable development, and land degradation neutrality (UNCCD, 2017) objectives.

This brief summarizes the key findings from EFT implementation in North Luwu. It provides relevant policy insights and identifies priority gaps for stakeholders, particularly policy makers, to advance jurisdictional sustainability and enhance strategic planning for future fiscal mechanisms.

## Policy Framework of Ecological Fiscal Transfers at District Level in Indonesia

EFT can take the form of general-purpose or specific-purpose transfers (Busch et al., 2021). This brief focuses on EFT as a general-purpose transfer, specifically the General Allocation Fund (*Dana Alokasi Umum/DAU*) in Indonesia, which flows from the national to subnational governments. These funds can be used flexibly, including for environmental priorities, offering local governments greater discretion than specific-purpose transfers (Mumbunan et al., 2012)

At the district level, Indonesia has developed a localized form of EFT called TAKE (Ecology-Based District Budget Transfer). This scheme enables vertical transfers from the district to villages by incorporating ecological indicators into the allocation process. TAKE aims to directly support local communities through environmental fiscal policies.

TAKE is legally grounded in Law No. 32/2009 and Government Regulation No. 46/2017, functioning as an economic instrument for compensating environmental services. It is also supported by other fiscal and ecological regulations (Table 1). The scheme operates through two main funding channels:



**Table 1. Fiscal and ecological regulatory framework for TAKE**

Regulations
<b>Fiscal regulatory framework</b>
<ul style="list-style-type: none"> <li>Article 96 of Government Regulation No. 47/2015 (Amendment to Government Regulation No. 43/2014 on the Implementation of Law No. 6/2014 on Villages)</li> <li>Minister of Finance Regulation No. 145 of 2023 on Village Fund Management</li> <li>Minister of Villages, Disadvantaged Regions Development, and Transmigration Regulation No. 7 of 2023 on Details of Village Fund Priority Use</li> <li>Minister of Home Affairs Regulation No. 20 of 2018 on Village Financial Management</li> <li>Minister of Home Affairs Regulation No. 77 of 2020 on Technical Guidelines for Regional Financial Management</li> <li>Government Regulation (PP) No. 12 of 2019 on Regional Financial Management</li> <li>District Financial Assistance or Village Fund Allocation (ADD)</li> <li>Regent Regulation No. 1 of 2025 on Procedures for Allocation, Distribution, and Use of Village Fund Allocations</li> </ul>
<b>Ecological regulatory framework</b>
<ul style="list-style-type: none"> <li>Law No. 41 of 1999 on Forestry</li> <li>Law No. 32 of 2009 on Environmental Protection and Management</li> <li>Law No. 32 of 2024 on Conservation of Natural Resources and Ecosystem</li> <li>Law No. 16 of 2016 on the Ratification of the Paris Agreement under the UN Framework Convention on Climate Change</li> <li>Government Regulation No. 22 of 2021 on the Implementation of Environmental Protection and Management</li> </ul>

(i) Village Fund Allocation (ADD), constituting at least 10% of DAU<sup>5</sup>, and (ii) special financial assistance, direct transfer from districts to village transfers and managed independently by village government<sup>6,7</sup>.

In North Luwu, TAKE has been implemented through ADD. As ADD falls under the fiscal discretion of the regent, raising awareness and advocating for the objectives of EFT are crucial to ensure effective and sustained implementation.

## TAKE Implementation 2023-2024 in North Luwu

North Luwu began implementing TAKE in 2022, starting with capacity development programs to introduce the EFT concepts to district officials. This was followed by the integration of ecological indicators, ensuring data availability while maintaining relevance. These indicators were incorporated into the revised ADD regulation under Regent Regulation No. 57 of 2022. In 2023, under this regulation, ADD was distributed transparently using two components: (i) Basic allocation, used for salaries and operational village governance expenses and (ii) Village Performance allocation. The village performance allocation is the key mechanism for TAKE based on two main indicators: (1) the Village Development Index and (2) the Sustainable Village Performance Score (data sourced from the Ministry of Villages and Development of Disadvantaged Regions).



In 2024, TAKE continued by Regent Regulation No. 1 of 2024, maintaining the same indicators and policy framework and indicators. In 2023, the village performance allocation was IDR67,486,624,000 taken from the total ADD of IDR1,786,009,600 and in 2024 it was IDR69,544,862,000 taken from the total ADD of IDR1,623,862,000. Performance-based allocations targeted 30 of the 166 villages, covering diverse landscapes (coastal, plains, and mountainous areas). Table 2 below presents an overview of these indicators, and their weight proportions used to select top-performing villages for village performance allocation in 2023 and 2024.

The district officials acknowledged that the initiative was still in its formative stage and required further improvements, especially in building a clearer understanding of the policy's principles and environmental objectives. Technical support and clearer alignment with broader environmental goals are

<sup>5</sup> Minister of Finance Regulation No. 41/PMK.07/2021 of 2021 on Procedures for Postponement and/or Deduction of Balance Funds for Regions That Do Not Meet Village Fund Allocations.

<sup>6</sup> Government Regulation (PP) No. 12 of 2019 on Regional Financial Management.

<sup>7</sup> Minister of Home Affairs Regulation No. 77 of 2020 on Technical Guidelines for Regional Financial Management.

Table 2. Summary of indicators used for village performance allocation in 2023 and 2024

Indicators	Sub Indicator	Weight proportion
Village Development Index	Previous year's Village Development Index score	21.6%
	Growth rate of Village Development Index over the past two years	14.4%
	Previous year's Environmental Quality Index score	14.4%
	Growth rate of Environmental Quality Index over the past two years	9.6%
Sustainable Village Performance	Previous year's Sustainable Village Performance score	24%
	Previous year's Clean and Renewable Energy Village score	4%
	Previous year's Climate Change-Responsive Village score	4%
	Previous year's Marine Environment Village score	4%
	Previous year's Land Environment Village score	4%

also needed to create a more structured and results-driven approach. To improve transparency, independent monitoring and ecological verification were introduced. Additionally, EFT principles were integrated into broader regional development strategies, aligning village-level initiatives with provincial and national sustainability goals, fostering long-term environmental stewardship and sustainable landscape management. By incorporating it into the medium-term development plan (RPJMD), the environmental goals are linked with fiscal incentives, for example, including ecological indicators in development targets or prioritizing programs.

Monitoring and evaluation of the 2023-2024 implementation informed efforts to refine TAKE in 2025. A major shortcoming was the lack of annual performance assessments to monitor fund allocations since the first year of implementation, which hindered transparency and accountability. Therefore, 2024 efforts focused on strengthening evaluation mechanisms and adjusting policies for greater effectiveness in 2025 implementation. Strengthening evaluation mechanisms through adjusting policies based on periodic performance reviews and ecological outcome assessments.

A comprehensive performance review showed that of the 30 villages receiving performance-based funds in 2023, only nine maintained their performance in 2024, highlighting challenges in sustaining impact. Regarding fund use, the majority are still focused on infrastructure. In 2023, 54% of the funds were allocated to village infrastructure, public facilities, and water/sanitation. In the first semester of 2024, 40% of the funds went to water and sanitation infrastructure (Table 3).

We concluded that the disproportionate allocation of funds stemmed from a lack of awareness among village officials on appropriate fund utilization, compounded by overly broad activity guidelines in the regent's regulation. The identification and mapping of funding allocations were carried out as part of the assessment and will be used to refine performance indicators and improve the allocation formula for the TAKE scheme. These findings informed the upgrade of the 2025 scheme by introducing a well-structured logical framework and strengthening institutional processes, ensuring financial incentives are more effectively directed towards more ecologically focused activities.

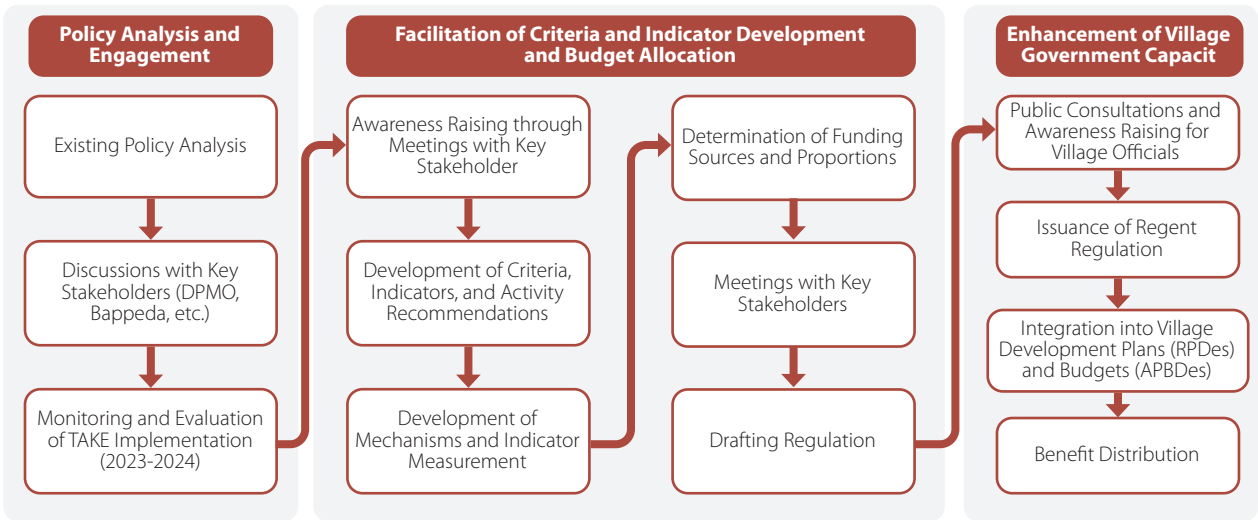


Figure 1. TAKE Implementation Workflow in North Luwu

**Table 3. Percentage of fund allocation**

Type of Activities	(%) of Total Allocation	
	2023	2024*
Disaster Mitigation	8%	2%
Environmental Awareness and Management	1%	1%
Gender Equality and Child Protection	4%	6%
Human Development	1%	0%
Institutional Development	2%	1%
Unclear Spending/No Report on Spending	2%	12%
Village Infrastructure & Public Facilities	27%	30%
Waste Management	28%	7%
Water Resources & Sanitation Infrastructure	27%	40%

\* Based on the evaluation from Semester I

## Institutionalization of TAKE in North Luwu

The institutionalization of TAKE in North Luwu for 2025 involved a structured process to align EFT indicators with regional development priorities (Figure 1). The process began with a review of previous TAKE regulations and regional planning documents, followed by consultations with key stakeholders, including the Community and Village Empowerment Office (DPMD) and the Regional Development Planning Agency (Bappeda). Monitoring and evaluation of the 2023–2024 implementation provided a foundation for refining the 2025 indicators. Awareness-raising workshops helped build a shared understanding of TAKE’s goals, challenges and opportunities. The next step involved defining updated criteria, indicators, allocation mechanisms and monitoring methods. DPMD coordinated with key agencies: the Regional Finance and Asset Agency, the Legal Department, Bappeda, the Agriculture Office, and Village Facilitators. Public consultations were held to ensure transparency, stakeholder engagement and policy alignment. Key stakeholders invited included local government agencies, community groups, farmer cooperatives, NGOs, and academics. Consultations were conducted during the initial assessment and drafting stages, resulting in adjustments such as the inclusion of local priority areas and refinement of indicators. The process concluded with the issuance of Regent Regulation No 1 and 2 of 2025, integration into village planning and budgeting (RKPDs & APBDs), and capacity development programs for village officials to implement performance-based fund allocation effectively.

## TAKE 2025: Upgraded Indicators and Focus Areas

The 2025 TAKE framework reflects efforts to enhance institutionalization, increase funding, and improve impact. The ADD budget has increased to IDR82,071,329,000 despite ongoing challenges related to spending efficiency. The village performance allocation also increased to IDR2,000,000,000 of the total ADD. The villages selected to benefit from TAKE

reached 40 villages, an increase for previously 30 villages. Table 4 provides an overview of the criteria, total number of indicators and their corresponding weight proportions used to determine the best-performing villages for the 2025 village performance allocation.

**Table 4. Proportion of indicators in 2025**

No	Criteria	Number of Indicators	Weight Proportion
1.	Governance Strengthening and Compliance	3	15%
2.	Village Economic Development	3	10%
3.	Economic, Social, and Environmental Sustainability	14	60%
4.	Public Services and Community Participation	4	10%
5.	Village Monitoring and Accountability	3	5%

The revised indicators align with the Sustainable Development Goals (SDGs), incorporating economic, social, and environmental sustainability (Table 5). Of the 14 total indicators, six are directly focused on environmental sustainability, emphasizing the importance of resilience and ecological integrity. These indicators are: (1) Village regulation on waste management (2) Disaster Mitigation Program, which enhances resilience to natural hazards; (3) Sustainable Food Program, aimed to promote eco-friendly food security practices; (4) Village Priority Commodity Development Program, that encourages sustainable economic activities aligned with local resources and ecological conditions; (5) Environmental Activities, that includes activities to improve Water, Air, Soil, and Land Cover; and (6) Rehabilitation, Reforestation, and Agroforestry, which encourage ecosystem restoration and sustainable land-use practices.

**Table 5. Proportion of indicators for economic, social, and environmental sustainability**

No	Criteria	Indicators	Weight Proportion
3.	Economic, Social, and Environmental Sustainability	Village innovation	1%
		Village innovation award or national/provincial/district level award	2%
		Developing village economy through MSMEs	3%
		Economic development through flagship products	6%
		Poverty reduction program	3%
		Village regulation on child and women violence prevention program	3%
		Village regulation on handling out-of-school children	3%
		Inclusive village development program	3%
		Village regulation on waste management	6%
		Disaster mitigation program	6%
		Sustainable food program	6%
		Village priority commodity development program	6%
		Environmental activities related to water, air, soil and land cover improvement	6%
		Rehabilitation, reforestation, and adoption of agroforestry	6%

*\*Grey cell = directly linked to environmental aspect*

In promoting sustainable cocoa, indicators specifically related to cocoa have not yet been explicitly included in the TAKE 2025 framework. However, they were indirectly accommodated through indicators on rehabilitation, reforestation, and the adoption of agroforestry practices—measured by the number of regulations and activities carried out over the past year. SFITAL's efforts to improve the welfare of cocoa farmers in North Luwu through the implementation of cocoa-based agroforestry practices directly contribute to the achievement of these indicators. In 2025, three SFITAL-target village—Salama, Tullak Tallu, and Pararra—were among the 40 selected for performance-based allocations. A key recommendation under TAKE 2025 was to prioritize village performance funds for environmental protection, with agroforestry recognized as a strategic focus area.



## Learnings

### Ecological Indicators and Village Level Challenges

Defining ecological indicators at the village level remains challenging due to limited data availability. In 2023–2024, the broad scope of TAKE indicators hindered accurate impact assessment. Although an online participatory platform was introduced to improve data collection in 2025, indicators related to sustainable commodities were still underdeveloped and not tailored to North Luwu's diverse landscapes, from coastal to highland areas. Future improvements should include more specific, landscape-sensitive indicators, supported by spatial analysis and participatory mapping, to better reflect local ecological conditions and village-level potential.

### Leadership and Policy Trade-offs

TAKE implementation depends heavily on political commitment, particularly from the regent, as it operates under fiscal discretion. It is also supported by Bappeda and the Village Community Empowerment Agency (DPMD), as it operates under the regent's fiscal discretion. While strong leadership has enabled the scheme, the sustainability of TAKE also depends on institutionalization beyond individual leadership. To address this, there is a need to strengthen the capacity of leading and supporting agencies through continuous awareness-raising, policy advocacy, and technical assistance.

## Balancing Consistency and Adaptability in TAKE Indicators

Effective TAKE implementation requires a balance between consistent indicators for long-term planning and adaptable indicators responsive to shifting priorities. Maintaining core indicators while allowing periodic refinement ensures both stability and relevance, enabling the mechanism to evolve with policy and environmental.

## Recommendations

North Luwu’s integration of performance-based village funding through *Regent regulation No. 1 of 2025 on ADD* represents a significant step towards linking fiscal policy with ecological objectives. Although currently a hybrid model, blending ecological and economic indicators, further refinement can strengthen its environmental impact.

Four key strategies are recommended to support sustainable environmental governance.

First, strengthening monitoring mechanisms requires GIS and remote sensing capacity, clear national frameworks, inter-agency data sharing, and technical training. Second, enhancing community-based conservation involves empowering local organizations through training, access to microfinance, and institutional support. Third, develop regulatory and fiscal framework for clarity, dedicated district

budgets, and performance-based funding. Finally, capacity development for district-level regulation should include training programs, technical assistance, and standardized tools developed with local governments and academic institutions. Together, these strategies enable coordinated, data-driven, and community-supported conservation efforts at local and regional levels.

Strengthening this EFT mechanism in North Luwu can encourage better ecological governance at the village level. A well-functioning EFT scheme can unlock additional fiscal incentives from higher levels of government (e.g., Revenue Sharing Funds from Natural Resources/DBH SDA and Regional Incentive Funds/DID), align village funding with district environmental priorities, and contribute directly to the achievement of long-term regional planning targets (RPJPD, RPJMD). By linking fiscal incentives to performance on ecological and commodity-based indicators, EFT can help direct village-level investments toward activities that support sustainable cacao.

It is also crucial to align the long-term vision of the Sustainable Cacao Roadmap 2024–2044 with local planning and budgeting instruments. The availability of village priority commodity development programs, for instance, through village funds or local initiatives offers a good starting point to integrate sustainability targets into village planning. At the village level, TAKE can be optimized through targeted capacity development for cocoa farmer groups, technical and policy assistance for integrating sustainability principles into village

Table 6. Recommendation of strategy area

Strategy Area	Short-Term (0–1 year)	Medium-Term (1–3 years)	Long-Term (3+ years)	Lead Agencies	Potential Partners
1. Monitoring & Data Systems	Provide technical training on GIS & remote sensing to local officials	Develop integrated village-level environmental monitoring systems	Institutionalize GIS-based monitoring within district planning systems	Bappeda, Environmental Agency (DLH)	Ministry of National Development Planning (Bappenas), Geospatial Information Agency (BIG), local university (i.e. Univ. Andi Djemma), Ministry of Agriculture, development partners
	Initiate inter-agency data sharing agreements	Strengthen national–local indicator alignment		Bappeda, DPMD	Bappenas, National Research and Innovation Agency (BRIN), development partners
2. Community-Based Conservation	Train local organizations and communities	Establish village-based conservation incentives and recognition mechanisms	Formalize long-term partnerships with community conservation groups	Bappeda	Ministry of Forestry, Ministry of Environment, Bappenas, NGOs and CSOs
	Facilitate access to microfinance for green activities			DPMD, DLH	Ministry of Finance, BPD LH/IEF, BRI, BSI



Strategy Area	Short-Term (0–1 year)	Medium-Term (1–3 years)	Long-Term (3+ years)	Lead Agencies	Potential Partners
3. Fiscal & Regulatory Frameworks (EFT)	Clarify district regulations for TAKE implementation	Develop and test performance-based funding formulae linked to environmental outcomes	Align TAKE with national fiscal incentive schemes (e.g., DBH SDA, DID) and embed into intergovernmental transfer logic	DPMD, DLH	Ministry of Finance, BPDH/IEF, Bappenas, NGOs and CSOs
	Secure annual district budget allocation			DLH	Ministry of Finance, BPDH/IEF, CSOs, NGOs, development partners
4. District Capacity Building	Conduct training for local governments and DPRD on EFT logic and procedures	Co-develop standardized tools with academic partners and local stakeholders	Integrate capacity development modules into routine district planning and budgeting cycle	Bappeda, Regional Financial and Asset Management Agency (BPKAD), DPMD	Ministry of Home Affairs, Ministry of Finance, Bappenas, local universities (i.e. Univ. Andi Djemma)

planning (RPJMDs), and institutional support to strengthen local regulations or village-owned enterprises that promote sustainable cacao production.

In the future, the recently enacted Law No. 32/2024 opens opportunities for Indonesia to strengthen alignment with global biodiversity frameworks, such as the Kunming–Montreal Global Biodiversity Framework (CBD, 2022), by developing fiscal and institutional mechanisms that incentivize biodiversity-positive actions at subnational levels. Integrating measurable biodiversity outcomes into local planning and financing schemes in line with future policy targets for expanding preservation areas will be crucial.

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