



# INDONESIA'S \$5 BILLION BLACK HOLE IN FOREST FINANCE

# INTRODUCTION

This study, produced by WWF and Conservation Strategy Fund (CSF), quantifies current positive and negative financial flows directed toward highly forested areas in Indonesia<sup>1</sup>, in addition to estimating the actual forest financing needs for these areas and how financial flows can be changed to meet them. To better understand forest finance, the study identifies financial flows provided by public and private sources, both domestic and international, and specifies the financial instruments used. Forest positive financial flows were defined as those that support forest conservation, restoration, sustainable use, or protection; while negative financial flows were defined as flows promoting agriculture, cattle, pulp and paper, mining, timber, and infrastructure expansion in forested areas. This analysis aims to increase transparency and accountability, enable the monitoring of resource allocation over time, and focus efforts on the most promising solutions to plug the financing gap for forests.

## METHODS AND DATA

The databases used include the National Government Budget (Anggaran Pendapatan dan Belanja Negara/APBN), Regional Government Budget (Anggaran Pendapatan dan Belanja Daerah/APBD), Organization for Economic Cooperation and Development Creditor Reporting System (OECD-CRS), the Badan Pengelola Dana Lingkungan Hidup Nasional (BPD LH), the Forests & Finance, the Climate Bonds Initiative, the Green Bond Transparency, and the ICMA Group, among others. The analysis of financial needs and how flows can be changed was based on a literature review. Throughout the process, interviews with experts were conducted as needed. The analysis of current finance flows covers the period 2020 to 2024 and is presented as an average over this period<sup>2</sup>. Forecasting of future financial flows was for the year 2030.

Limitations in the availability and quality of databases, particularly for private finance, posed a challenge, and in some cases, did not provide enough detail to allow us to isolate and classify financial flows. In these instances, we took a conservative approach, and as such, both positive and negative private financial flows are likely underestimated. Illegal financial flows and private companies' investment in their supply chains were not captured in this study due to the lack of suitable data.

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<sup>1</sup> Municipalities were classified as highly forested when more than 50% of their territory was covered by native vegetation. Forest cover estimates were derived from the MapBiomass (2020) dataset.

<sup>2</sup> Further details on the methods are available via the QR code at the end of this document.

# HOW MUCH DO INDONESIA'S FORESTS

## CURRENTLY RECEIVE?

The estimated annual mean positive financial flows directed toward highly forested areas in Indonesia amount to approximately US\$244 million per year. In contrast, the mean annual negative financial flows are estimated at around US\$3.4 billion per year. This means that negative flows are about 14 times greater than positive ones.

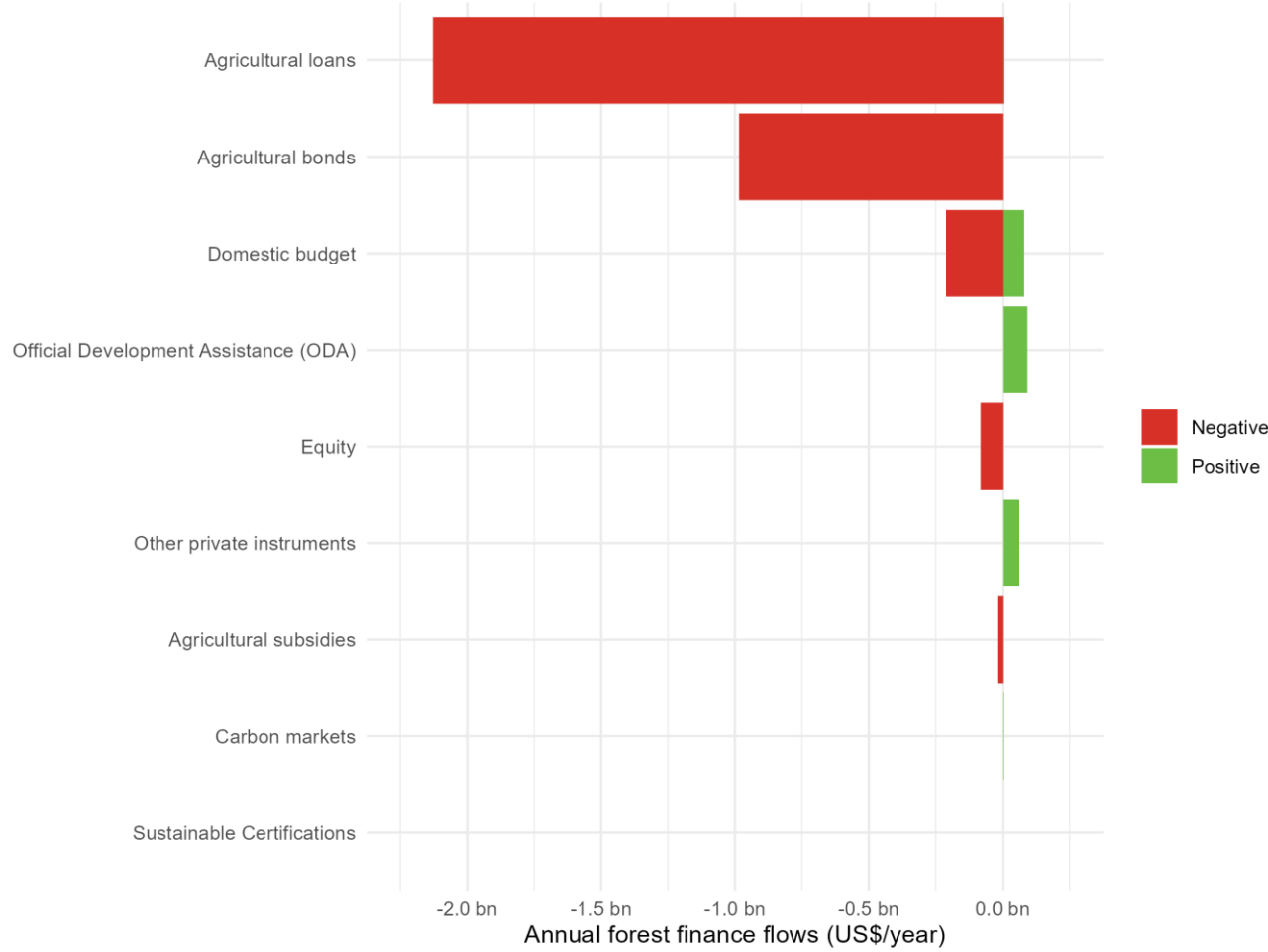


Figure 1. Positive and negative forest finance annual mean flows for Indonesia's forests.

Source: WWF and CSF based on data from APBN (2020-2023), APBD (2023-2024), OECD-CRS (2024), Forests&Finance (2024), Verra (2024), Bank's Green Bond Reports (2024).

## POSITIVE FINANCE FLOWS

The vast majority of positive forest finance flows originate from public sources, totaling US\$225 million, representing 92.7% of total positive flows. Overall, more positive forest finance is received from international sources (US\$145 million) than from domestic sources (US\$80 million).

International public resources come primarily from Official Development Assistance (ODA), from both bilateral and multilateral sources, totaling US\$83 million, while Other Official Flows (OOF) account for US\$61 million. Domestic public resources originate almost entirely from the national budget, amounting to US\$80 million.

Although smaller in volume, private resources also contribute somewhat to positive forest finance flows in Indonesia, totaling US\$16 million. Of this amount, international philanthropic contributions account for US\$12 million, while international businesses and markets represent around US\$2 million, driven mainly by carbon market initiatives and, to a lesser extent, by green bonds and sustainability certifications supporting forest management and conservation. Domestic private resources remain limited, with approximately US\$1 million mobilized primarily through green bonds.

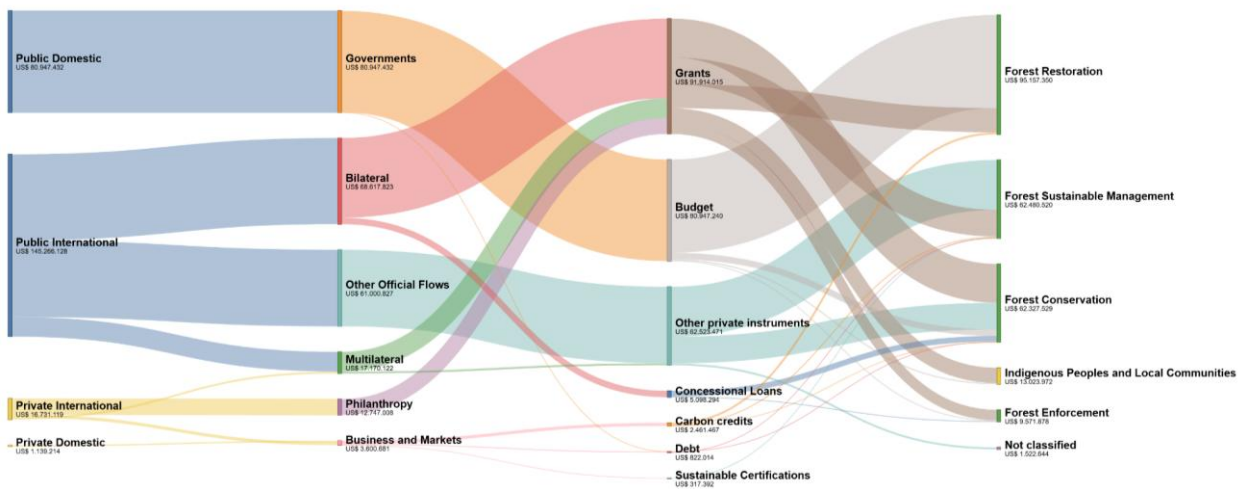


Figure 2. Positive forest finance annual mean flows for Indonesia represented through a Sankey diagram.

Source: WWF and CSF based on data from APBN (2020-2023), APBD (2023-2024), OECD-CRS (2024), Forests&Finance (2024), Verra (2024), Bank's Green Bond Reports (2024)

## NEGATIVE FINANCE FLOWS

Negative flows are predominantly from private sources, totaling US\$3.4 billion. These resources are primarily channeled through agricultural loans in recently deforested areas (US\$2.1 billion), while agriculture bonds account for US\$984 million. Almost all of the negative financial flows are allocated to the palm oil and pulp and paper sectors, while a smaller share of these flows (less than 1%) is associated with mining and infrastructure projects.

Negative public resources channeled through the domestic budget amount to US\$211 million. These funds are largely directed to programs that support agricultural activities, infrastructure, and energy development. Subsidies account for an additional US\$20 million, primarily composed of government disbursements that support programs promoting agricultural expansion and intensification.

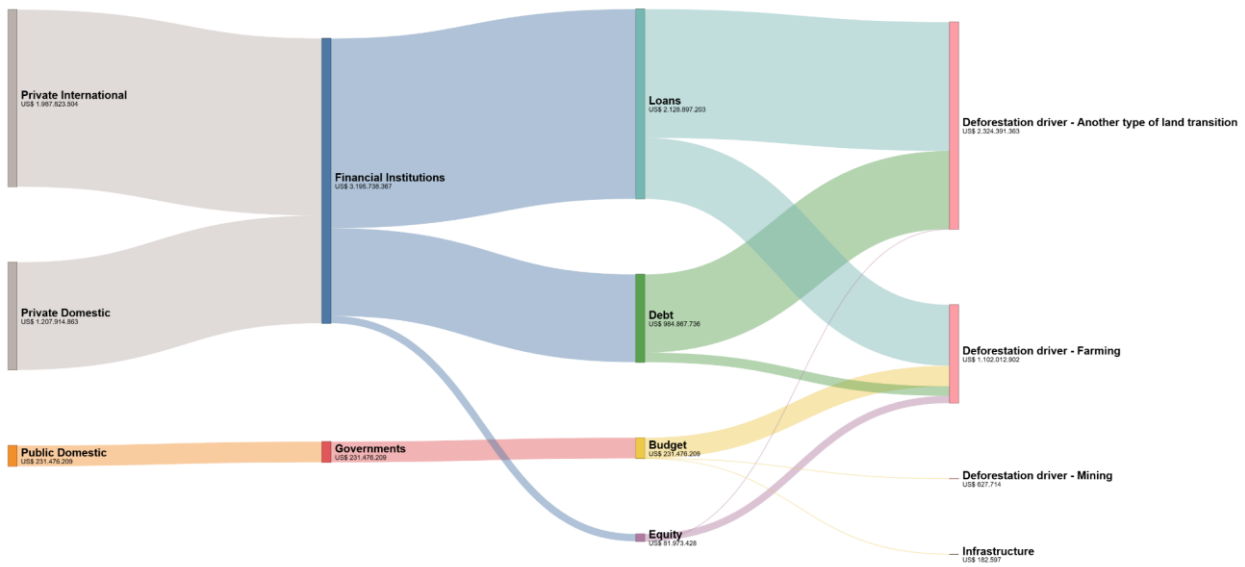


Figure 3. Negative forest finance annual mean flows for Indonesia represented through a Sankey diagram.

Source: WWF and CSF based on data from APBN (2020-2023), APBD (2023-2024), OECD-CRS (2024), Forests&Finance (2024), Verra (2024), Bank's Green Bond Reports (2024)

# HOW MUCH IS NEEDED?

This analysis of Indonesia’s forest finance needs considers the amount required to meet the objectives of the country’s forest policies, particularly the Indonesia FOLU Net Sink 2030 targets (Ministry of Environment and Forestry, 2022)<sup>[3]</sup> and the Indonesia Enhanced Nationally Determined Contributions (NDC) (Republic of Indonesia, 2022)<sup>[4]</sup>. The total financial needs to achieve the targets of forest-related policies in Indonesia amount to approximately US\$5.3 billion annually.

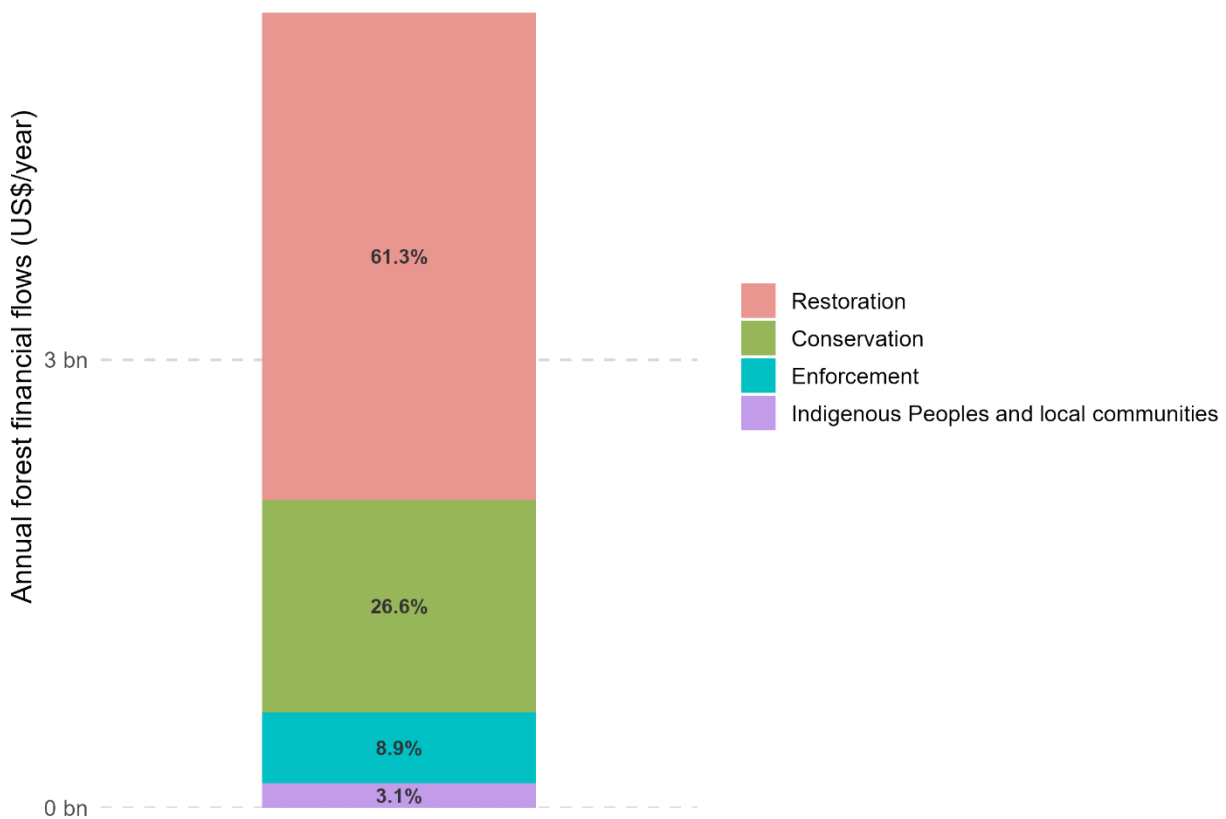


Figure 4. Annual forest finance needs for Indonesia’s forests based on forest-related public policies.

Source: WWF and CSF based on data from Ministry of Environment and Forestry (2022), Republic of Indonesia (2022), Putri et al. (2013), Gasparinetti et al. (2022), BRWA (2025).

**Conservation:** The estimated annual funding needed for forest conservation amounts to US\$1.4 billion. This category captures the costs of maintaining and sustainably managing Indonesia's remaining forests in forest areas. The analysis estimates costs across approximately 64 million hectares of forest under conservation or sustainable management. Based on data from FOLU Net Sink cost models and investment projects, total costs range from US\$ 37-106 per hectare. The estimate of US\$ 920 million represents the average investment required to operationalise existing conservation targets. Forest conservation costs also include the opportunity costs for oil palm, which costs US\$ 500 million for 750 thousand hectares of convertible forest areas that are potentially converted for agricultural land.

**Restoration:** The estimated annual funding needed for forest restoration amounts to US\$2.3 billion. This covers the restoration of 7.3 million ha in 18 forest-rich provinces, including 1.26 million ha in protected areas and 1.69 million ha of productive restoration using agroforestry systems. Restoration costs include investment, five-year operations, and opportunity costs which represent the income foregone by not converting forested or degraded land into more profitable uses, particularly oil palm. The adjusted opportunity cost per hectare was US\$ 663.42 per year (Putri et al., 2013)<sup>3</sup>.

**Enforcement:** The estimated annual funding needed for forest enforcement amounts to US\$475 million. This category reflects the system-wide governance and compliance costs required to make restoration and conservation effective across the forest-rich provinces. The estimated unit cost is US\$53 per hectare per year, derived from combining patrol, management, law enforcement, and administration costs.

**IPLCs:** The estimated annual funding needs for Indigenous Peoples' lands and other collective territories amount to US\$166 million. This category estimates the cost of securing and managing Indigenous Peoples' and Local Communities' (IPLC) forest territories, which are vital for achieving the FOLU Net Sink target and ensuring social equity in climate action. The methodology uses the 5.4 million ha of officially recognized Indigenous lands from the Indigenous Territories Registration Agency (BRWA)<sup>4</sup> and extrapolates management costs based on Global Environment Facility (GEF) standards for community-based forest management of US\$145 per hectare per year.

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<sup>3</sup> <https://media.neliti.com/media/publications/15109-ID-analisis-kelayakan-finansial-kelapa-sawit-rakyat-studi-kasus-kecamatan-bagan-sin.pdf>

<sup>4</sup> <https://betahita.id/news/detail/11099/baru-5-3-juta-ha-wilayah-adat-yang-mendapatkan-penetapan.html?v=1747610647>

# HOW LARGE IS THE GAP?

When positive financing flows are compared with estimated financing needs, the resulting funding gap for forests in Indonesia is US\$5.1 billion annually. This implies that current levels of financing cover only 5% of the total resources required for forest conservation, restoration, and the stewardship and governance of customary lands. These estimates should not be interpreted as absolute values, but rather as indicative of the magnitude of the challenge and as a benchmark for ambitious planning and resource mobilization efforts for forests in Indonesia.

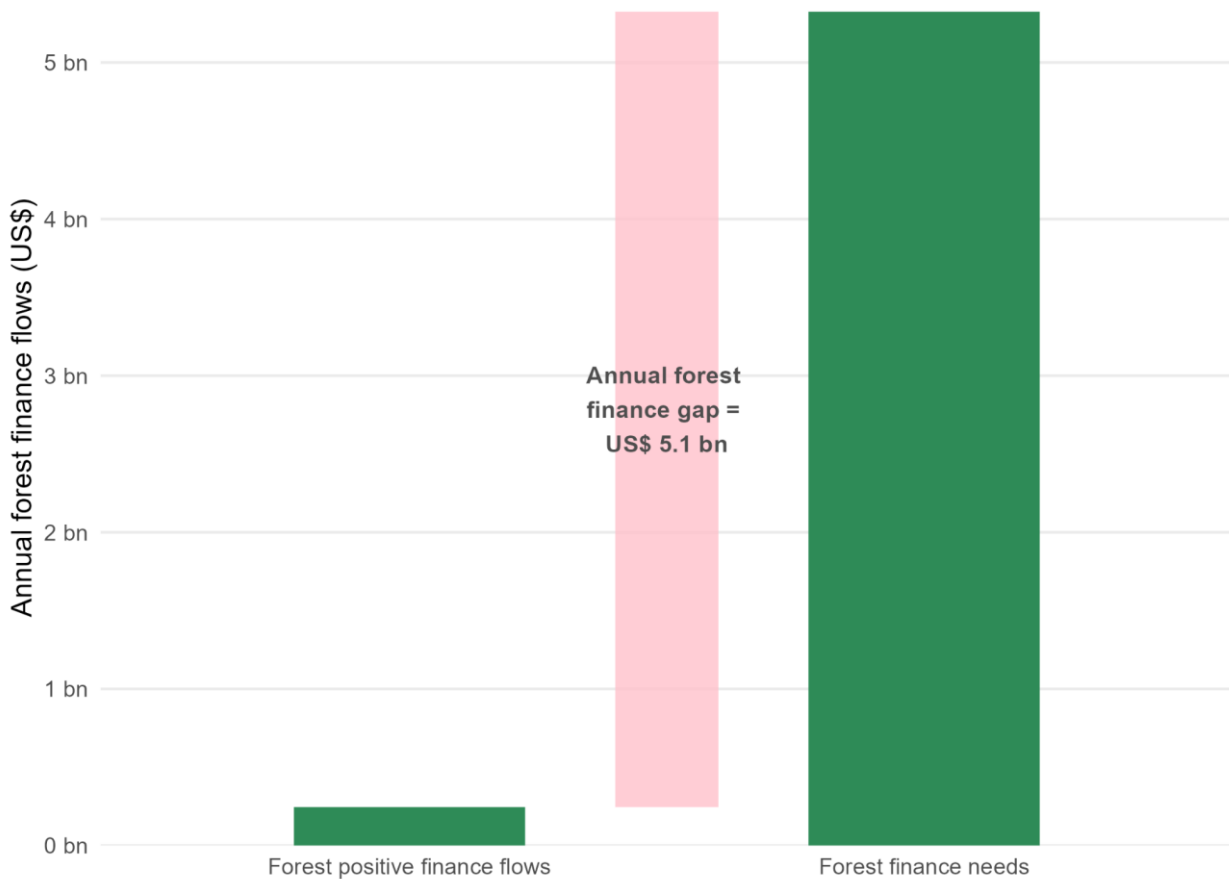


Figure 5. Gap between current positive financial flows and financial needs for Indonesia's forests.

Source: WWF and CSF analysis

# HOW CAN INDONESIA'S FOREST FINANCE GAP BE CLOSED?

Finally, this study also analysed the potential to change finance flows based on existing instruments that could be enhanced, as well as new instruments expected to be implemented in the near term. In this high ambition scenario<sup>5</sup>, positive flows could reach up to US\$3 billion annually, and negative flows of US\$2 billion repurposed annually.



Figure 6. How Indonesia's forest finance gap could be closed by scaling positive flows (green) and repurposing negative ones (red). Source: WWF and CSF.

<sup>5</sup> The high ambition scenario represents an optimal condition in which all financial mechanisms operate at their full potential, institutional frameworks are fully functional, and all enabling conditions are in place — reflecting a best-case context for mobilizing resources at maximum capacity. The selection of innovative financial instruments was based on assessment and consultation with experts on instruments currently under development or that could be scaled up to increase financial flows for forests.

Instruments with the greatest potential to increase positive flows include the expansion of sustainable bonds and other forms of private instruments, which have the potential to raise up to US\$1.3 billion in investment for sustainable value chains that support low-emission commodities and community enterprises.

Other positive flows with a high potential to expand are carbon markets through REDD+ result-based payments (RBP) (US\$600 million), and an increase of Official Development Assistance (ODA) (US\$580 million) and domestic budgets (US\$221 million).

The Tropical Forests Forever Facility (TFFF) could reach around US\$200 million annually and would represent a near doubling of the funding Indonesia's forests currently receive.

Regarding instruments with potential to reduce negative flows, the analysis considers the reallocation of investments by financial institutions away from activities with high deforestation risk (US\$1.5 billion) and the reform of environmentally harmful agricultural subsidies (US\$440 million).

# ACTION IS NEEDED NOW

Closing the forest finance gap in Indonesia requires not only mobilizing additional resources but also transforming how financial and economic systems value forests and integrate long-term sustainability into decision-making. A shift toward forest-positive development pathways will rely on strengthening incentives, expanding innovative financing, and reducing exposure to activities that drive deforestation. The recommendations below outline high-level avenues through which public, private, and market actors can contribute to this transition.

## **Strengthen environmental and social risk management across financial systems**

There is an opportunity for financial actors to deepen the integration of environmental and social risk considerations into their internal policies, credit processes, and portfolio management systems. Enhanced due diligence, portfolio screening, and disclosure practices can help reduce exposure to activities associated with the conversion of natural forests while improving the alignment of financial flows with sustainability goals. Greater uptake of sustainability frameworks across the financial sector could also support the expansion of credit and investment products that reward forest-positive enterprises and low-emission value chains.

## **Enhance transparency and alignment of fiscal and market incentives with forest-positive outcomes**

Strengthening transparency in public spending and investment flows can help identify opportunities where fiscal instruments, subsidies, or incentive structures may be better aligned with sustainable land-use objectives. Revisiting the design of existing incentives could allow forest-positive activities, such as sustainable commodities, restoration projects, and community enterprises, to become more competitive. Aligning economic incentives with long-term ecological objectives can support Indonesia's broader development agenda while reducing pressure on forest frontiers.

## **Expand performance-based and market-based financing mechanisms**

Indonesia has significant potential to scale up performance-based mechanisms and environmental markets that channel finance toward forest conservation, restoration, and sustainable livelihoods. As measurement, reporting, and verification systems continue to strengthen, these mechanisms could mobilize more predictable and long-term revenue streams for forest-rich regions. Blended finance structures, combining concessional, philanthropic, and private capital, can also help reduce investment risks and attract larger-scale participation in nature-based solutions.

## **Support the transition toward sustainable and inclusive value chains**

Forest-positive value chains can be strengthened by encouraging traceability, responsible sourcing, and investment in low-emission production systems. Collaborative approaches involving producers, processors, buyers, and financial intermediaries can help shift land-use practices and reduce deforestation risks. Supporting community-based enterprises; micro, small, and medium enterprises (MSMEs), and local producer groups can enhance economic resilience while reinforcing incentives to maintain standing forests.

### **Increase multi-source, long-term financing for forest conservation and IPLC stewardship**

Bridging the forest finance gap will require a diversified mix of domestic and international resources, including public budgets, development finance, philanthropic contributions, and private investment. Multi-year planning and financing frameworks could help ensure greater predictability for conservation programs, ecosystem restoration, and the management of Indigenous Peoples' and local communities' territories. Broader participation from various funding sources can help Indonesia advance forest protection while supporting rural livelihoods and inclusive growth.

### **Improve coordination and enabling conditions for forest-positive investments**

Strengthening coordination among government bodies, the financial sector, development partners, and civil society can help ensure that forest-positive initiatives are coherent and complementary. Improving access to data, enhancing land-use planning systems, and developing clear guidance for sustainable investment practices can further reduce uncertainty for investors. These enabling conditions can help accelerate the transition toward forest-positive development models that align with national climate and biodiversity objectives.

# FURTHER INFORMATION

The opinions expressed in this discussion paper are those of the authors, and do not necessarily reflect the official position of WWF.

Full methods and related results are available at [www.wwf.org.uk/articles/forest-finance](http://www.wwf.org.uk/articles/forest-finance)



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