

ANNEX

Annex 2. Sustainable production & development

Selection of prominent sustainability schemes targeting the mining sector

Supply chain target	Sustainability scheme	# of top-20 companies adopting	Relevance for forests
For mining and processing only	The International Council on Mining and Metals (ICMM)'s Mining Principles	12	Under the Biodiversity Principle , companies are expected to avoid World Heritage Sites and respect legally designated protected areas; and to apply the mitigation hierarchy to assess and address risks and impacts to biodiversity and ecosystem services, aiming to achieve no net loss of biodiversity.
	Mining Association of Canada (MAC)'s Toward Sustainable Mining (TSM)	8	TSM includes a Biodiversity Conservation Management Protocol that sets out expectations for mining companies member to the Association with respect to conserving biodiversity and seeks to confirm that mining facilities have made formal commitments to manage biodiversity at their mine sites, using the mitigation hierarchy.
	Initiative for Responsible Mining Assurance (IRMA) Standard for Responsible Mining	2	IRMA provides a list of " Critical Requirements " that mining sites must meet to achieve so-called "IRMA 50" and "IRMA 75" certified levels as part of a stepwise onboarding process for companies. Under the critical requirements, companies need to conduct social and environmental impact assessments that cover the direct, indirect, and cumulative impacts on biodiversity, ecosystem services, and protected areas, accompanied by a mitigation and minimization plan, and ensure FPIC of Indigenous Peoples and/or evidence of positive relationships with IPs and LCs and remedies for past impacts.
For the upstream supply chain	ResponsibleSteel Standard	3	The ResponsibleSteel International Standard V2.0 launched in 2022, incorporating additional requirements on greenhouse gas (GHG) emissions and the sourcing of input materials. Principle 13 of the standard requires sites to assess their risk and impact on biodiversity in their area of influence and to implement a plan, in line with the mitigation hierarchy, to manage these risks and impacts, aiming for no net loss.
	Responsible Minerals Assurance Process (RMAP) of the Responsible Minerals Initiative (RMI)	4	RMI, via its flagship RMAP program, manages several due diligence standards covering a variety of minerals. This includes a general ESG standard for mineral supply chains, which includes requirements for minimizing and/or avoiding impacts to biodiversity, forests, and protected areas.
For the whole supply chain (mine to product manufacturing)	International Finance Corporation (IFC)'s Performance Standards	--	The eight Performance Standards cover social, environmental, health, and other standards that must be met throughout the life cycle of the investment. Performance Standard 6 requires consideration of direct and indirect project-related impacts on biodiversity and ecosystem services. In the context of biodiversity threats and impacts to ecosystem services, special focus should rest on habitat loss; degradation and fragmentation; invasive alien species; overexploitation; hydrological changes; nutrient loading; and pollution.
	Responsible Jewelry Council (RJC)'s Code of Practices	--	The Code of Practices states that impact assessments shall collectively assess "environmental, social and human rights impacts, including but not limited to impacts on biodiversity and ecosystem services, labor, and employment, gender, health and conflict. This includes cumulative and indirect impacts.
	Aluminum Stewardship Initiative (ASI) Performance Standard	2	The ASI Performance Standard V3.1 (2023) defines environmental, social, and governance principles and criteria for the aluminum value chain. The standard requires companies to assess and mitigate the biodiversity and ecosystem services impacts of their operations within their area of influence, including indirect project impacts on biodiversity or on ecosystem services upon which affected Communities' livelihoods are dependent. It also requires sites to conduct an environmental and social impact assessment, and to implement a management plan in line with the mitigation hierarchy

Adapted from Franken, G. & Schütte, P. (2022)

Annex 3. Finance for Forests

Annex 3.1 Sources of forest finance

Sources of forest finance may be public or private, national or international. Domestic public funding may come from general government revenue and revenue from state-owned forests. Private sources include forest owners, communities, the forest industry, philanthropic funds, and donors, as well as non-governmental organizations (NGOs). In the case of many NGOs, funds are raised from external sources. International public sources include bilateral aid agencies and multilateral financing institutions. International private sources are diverse, consisting of institutional and individual investors, the forest industry, and various NGOs and civil society organizations (CSOs).^a

^a Simula, M. (2008). [Financing flows and needs to implement the non-legally binding instrument on all types of forests](#). Washington, DC: The Program on Forests (PROFOR) at the World Bank.

Annex 3.2 Main public and private finance estimates

Finance type	Indicator	Finance estimate	Annual average	Description
Forest finance needs	Finance needed to protect, restore, and enhance forests globally at the scale and pace needed to achieve the goals of the Paris Agreement.	x	USD 45–460 bn	This is an indicative figure, based on several sources, and therefore risks overlap. No one source provides an estimate of the total need for forests globally across the whole package of interventions (reducing deforestation, restoration, A/R, and SFM), therefore this range combines various sources and activity scopes. Original source: NYDF Assessment Partners. (2021). Taking stock of national climate action for forests .
Green finance	Public international climate-related mitigation finance for forests	9.5bn		Climate Focus compilation of bilateral and multilateral climate mitigation-related development finance flows to all countries (cumulative 2010–2021). No more recent data is available. Original data source OECD DAC External Development Finance Statistics: Climate change (Recipient perspective). Available from OECD database .
	Public international REDD+ finance	6.9bn		Climate Focus compilation of REDD+ readiness and implementation, and results-based finance commitments (cumulative 2010–2022) - Data obtained directly from contacts, from publicly available reports, or from Climate Funds Update. Includes commitments and disbursements from NICFI, FCPF, GCF, FIP, ISFL, UN-REDD, REDD Early Movers, CBFF.
	Public domestic REDD+ finance	10.1bn		Climate Focus compilation of domestic REDD+ finance commitments from government investment plans of 16 REDD+ countries. Source: FCPF EPRDs (the 16 countries that budgeted for government expenditures). Note that investment plans cover different timeframes.
	Private finance	0	0	<i>No comprehensive data available</i>
	Total		26.5bn	2.2bn
Gray finance	Public international and domestic finance for agricultural subsidies	x	Up to USD 635bn	See Annex 3.3
	Private finance to forest-risk commodity supply chains	343bn	26.4bn	Forests & Finance data on the financial services (loans, underwriting facilities, bonds, shares) received by over 300 companies directly involved in the beef, soy, palm oil, pulp and paper, rubber and tropical timber supply chains (cumulative 2010-2022).
	Private grey finance to mining activities	99bn	14.1bn	Forests & Finance data on the financial flows of credit and investment to 23 mining companies operating in the world's three largest tropical forest regions (cumulative 2016-2022).
	Total	x	675.5bn	

Annex 3.3 Gray public finance estimates

Source	Indicator	Timeframe	Finance estimated
FAO, UNDP and UNEP (2021) A multi-billion-dollar opportunity – Repurposing agricultural support to transform food systems.	Global annual government support to agricultural producers. Includes price incentives and fiscal subsidies.	2013-2018	USD 540 billion per year, of which 70% (USD 378bn) was tied to the production of a specific commodity. The report states that such support measures can create negative environmental outcomes through, e.g., the overuse of agrochemicals and natural resources and the promotion of monoculture. As such, we use this figure as the minimum share of the total which may present risks to forests.
World Bank (2023) Detox Development Report	Global annual government support to the agricultural sector in the form of explicit subsidies. (Estimate based on data from Gautam et al. 2022).	2016-2018	USD 635 billion per year, of which 61% (USD 387bn) was coupled with production. The report states that this form of subsidy can cause harmful environmental spillovers that, among other things, encourage deforestation. As above, we take this figure as the minimum share of the total which may present risks to forests.

From these estimates, we deduce that gray public finance (in the form of agricultural subsidies) ranges between USD 378 billion to USD 635 billion per year.

Annex 3.4 Green budgeting and risk assessment tools in the public sector

Green taxonomy tools provide a standardized classification system that identifies projects with environmental objectives and mobilizes public and private finance to such activities. Both the EU's taxonomy^b and Colombia's taxonomy^c were implemented in 2022 and contain technical screening criteria for forest-related activities. Taxonomies may provide general screening requirements to avoid deforestation related investments (in some cases – but not all – leading to exclusion of those that do not meet requirements) or outline more detailed guidance on issues such as improved forest management, estimation of carbon impacts and appropriate time-periods for assessment.^d

New risk assessment frameworks are being developed to help financial actors understand the systemic risks that biodiversity loss and ecosystem degradation pose to their investments. It has been suggested that financial regulators have both the mandate and authority to ensure that financial flows do not contribute to the depletion of nature and forests, and financial actors around the world are beginning to embed such considerations in their decision making.^e Notable examples can be found in the Netherlands,^f France,^g Brazil,^h Malaysia,ⁱ and Chile.^j Regulators, financial authorities, and central banks are still working to fill gaps in understanding how systemic financial risks are associated with ecosystem degradation.^k

^b Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021. (2021).

^c Colombia launches green taxonomy. (2022, April 13). Argus Media.

^d UNFCCC Standing Committee on Finance. (2023). [Fifth Biennial Assessment and Overview of Climate Finance Flows](#). Bonn, Germany: UNFCCC.

^e See Chapter 2 in: Network for Greening the Financial System (NGFS). (2022). [Central banking and supervision in the biosphere: An agenda for action on biodiversity loss, financial risk and system stability](#). Paris, France: Network for Greening the Financial System.

^f De Nederlandsche Bank (DNB). (2020). [Indebted to nature Exploring biodiversity risks for the Dutch financial sector](#). Amsterdam, Netherlands: De Nederlandsche Bank.

^g Romain, S., et al. (2021). [A "Silent Spring" for the Financial System? Exploring Biodiversity-Related Financial Risks in France](#). (Working Paper Series no. 826). Paris, France: Banque de France.

^h Calice, P., Diaz Kalan, F., & Miguel, F. (2021). [Nature-Related Financial Risks in Brazil. \(Policy Research Working Paper; No. 9759\)](#). Washington, DC: World Bank.

ⁱ World Bank Group & Bank Negara Malaysia. (2022). [An Exploration of Nature-Related Financial Risks in Malaysia](#). Washington, DC: World Bank.

^j UNEP. (2022). Conference on "biodiversity loss and ecosystem degradation: implications for macroeconomic and financial stability". <https://www.unepfi.org/events/webinar-on-biodiversity-loss-and-ecosystem-degradation-implications-for-macroeconomic-and-financial-stability/>.

^k See e.g., NGFS. (2022); Galt, H., Chagas, T., Trouwloon, D., Hermann, B., Bravo, F., & Streck, C. (2021). [Shifting Finance Toward Sustainable Land Use: Aligning public incentives with the goals of the Paris Agreement](#). Amsterdam, Netherlands: Climate Focus.