UN environment programme

Nature in the red

Powering the trillion dollar nature transition economy

ECONOMICS OF LAND DEGRADATION INITIATIVE ELD

Global Canopy

State of Finance for Nature 2026

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Foreword

Getting the wheel turning to embed nature across the economy and society

Nature, on which we all depend, has become a depleted and degraded asset. The globalised economy, built on extraction of natural resources with little regard for associated environmental impacts, has racked up a massive environmental debt. Over the last decades this has only accelerated, with more species driven to extinction and vital ecosystems on the brink. But as this translates into ever clearer economic impacts, particularly in high-dependency sectors like food and agriculture, the world is waking up to this most fundamental of problems.

Forward-looking governments with climate and nature transition plans and businesses and financial institutions, which have started to assess and disclose climate- and nature-related financial risks, are becoming aware of the risks and financial implications that the current 'nature free-for-all' has for their economies and balance sheets. It is against this backdrop that we started the State of Finance for Nature (SFN) initiative to track data and trends on nature-relevant capital flows.

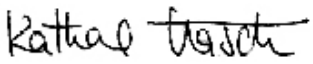
Over the past five years, SFN has kept improving its methodologies and data coverage, becoming a trusted source of decision-relevant information for governments and the private sector. The inaugural SFN 2021 covered terrestrial ecosystems only. Over time, its scope has expanded to include marine and freshwater ecosystems, and importantly SFN has started to track nature-negative capital flows. These dwarf the nature-based solution funding gap, starkly underlining the need for action.

We therefore call for the 'Big Nature Turnaround'. This means first protecting and restoring nature as outlined in the Global Biodiversity Framework. But it is more than that. Harnessing the opportunity of the big nature turnaround means re-purposing the trillions of dollars in nature-negative finance that are flowing around the world that degrade natural infrastructure that underpins human well-being and a large part of our global economy.

Getting the wheel turning on that big nature turnaround means embedding nature-based solutions in every key sector of economy and society, from manufacturing to infrastructure and real estate, and from energy to agriculture, forestry and tourism. It requires a perspective change to see nature as an asset that can improve human well-being in urban, industrial and rural areas by identifying economic opportunities to apply nature-based solutions as well as creating economic incentives to transition away from nature-negative capital flows.

It requires courage and a 'whole-of-society' approach to work on practical solutions, big and small, to make the transition to a nature-positive society a reality. This is the key message of this fourth edition of the State of Finance for Nature, and we urge governments and businesses to get the wheel turning on a great nature turnaround, with all the positive promise it brings. Let's work with nature, instead of fighting against it.

Martin Krause, Director, Climate Change Division UNEP



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Glossary

Biodiversity	The variability among living organisms from all sources including inter alia terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (United Nations Convention on Biological Diversity [UNCBD]).
Biodiversity credit	A tradable unit representing a measurable, additional, and verified positive impact on biodiversity outcomes generated through conservation or restoration activities beyond legal requirements (IUCN, UNEP Synthesis).
Biodiversity offset	A conservation action designed to compensate for residual, unavoidable biodiversity loss from development projects by generating equivalent biodiversity gains elsewhere, aiming for no net loss or a net gain (CBD and Business and Biodiversity Offsets Programme).
Environmental harmful subsidies	Finance flows mobilised by government policies or programmes that encourage unsustainable production or consumption and harm nature often through resource depletion, ecosystem degradation or adverse impacts on planetary health (Reyes-Garcia 2025).
Ecosystem service	Material and immaterial benefits that humans obtain either directly or indirectly from ecosystems.
Finance gap	The difference between current finance flows and future investment needs to achieve climate, biodiversity and land degradation neutrality targets.
Finance flows	Annual capital and operating expenditure from loans, debt, equity rounds, disbursements, revenues, budgeted amounts or other forms of tracked finance flows in monetary values.
Gender	The roles, behaviours, activities and attributes that a given society at a given time considers appropriate for men and women.
Green and sustainability linked bonds	Debt instruments. Green bond proceeds go to new or existing projects that are intended to have positive environmental or climate effects.
Natural capital	The world's stocks of natural assets, which include geology, soil, air, water and all living things. It is from natural capital that humans derive a wide range of services, often called "ecosystem services", which make human life possible (UNCBD).
Nature	The living parts of the biosphere, including their diversity and abundance and functional interactions with one another and with the abiotic parts of the earth system (IPBES-IPCC 2021).
Nature-based solutions	Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits (UNEA-5 2022).

Nature negative	Finance flows for activities that could potentially have a negative effect on nature (Deutz et al. 2020). Activities that are driving unsustainable use of land, freshwater, oceans and resources and ultimately undermining human well-being.
Nature positive	A high-level goal and concept describing a future state of nature (e.g. biodiversity with species, ecosystems and ecosystem services) that is greater than the current state of nature (e.g. positive outcomes for biodiversity and ecosystem services).
Nature-positive outcome	Measurable net-positive biodiversity outcomes through the improvement in the abundance, diversity, integrity and resilience of species, ecosystems and natural processes at all scales (global, national and landscape level (GBF, Nature Positive Initiative)).
Nature-related risk	Potential threats posed to an organization linked to its and other organizations' impacts and dependencies on nature. These can derive from physical, transitional and systemic risks. Climate Disclosure Standards Board (CDSB 2021); Taskforce on Nature-related Financial Disclosure (TNFD 2023a).
Pressure	The use of a measurable quantity of a natural resource or release of a measurable quantity of substances, physical and biological agents. A pressure triggers the mechanisms causing change in the state of nature (i.e. ecosystems and their components). As such, a single pressure may lead to multiple impacts.
Private finance mobilised by public ODF	Mobilisation refers to the ways in which specific mechanisms stimulate the allocation of additional financial resources to particular objectives; it requires a demonstrable causal link between finance made available for a specific project and the leveraging instrument used, including but not limited to syndicated loans, guarantees, shares in collective investment vehicles, direct investment in companies, credit lines, project finance and simple co-financing arrangements (based on OECD 2023b)
Protected area	A clearly defined geographical space that is recognised, dedicated and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values (UN Environment Programme World Conservation Monitoring Centre and IUCN [UNEP WCMC and IUCN] 2016).
Restoration	The UN Decade on Ecosystem Restoration definition includes activities to prevent, halt and reverse degradation and can be understood as a continuum of practices not limited to rehabilitation and ecological restoration but including other practices such as ecosystem management (The World Bank [WB] 2022a).

List of Abbreviations

AFOLU	Agriculture, Forestry and Other Land Use
AI	Artificial Intelligence
BIOFIN	Biodiversity Finance Initiative
CBD	Convention on Biological Diversity
CCICED	China Council for International Cooperation on Environment and Development
CBD	Convention on Biological Diversity
CDSB	Climate Disclosure Standards Board
CIEP	Centre for International Environmental Policy
CO2	Carbon Dioxide
COFOG	Classification of the Functions of Government
COP	Conference of the Parties
CRS	Creditor Reporting System
CSRD	Corporate Sustainability Reporting Directive
DAC	Development Assistance Committee
DIRO	Dependencies, Impacts, Risks and Opportunities
DLDD	Desertification, Land Degradation and Drought
DNS	Debt-for-Nature Swap
E&S	Environmental and Social
EA	Environmental Assessment
EBA	European Banking Authority
EHS	Environmentally Harmful Subsidies
EIB	European Investment Bank
ELD	Economics of Land Degradation
EMDEs	Emerging and Developing Economies
ENACT	Enhancing Nature-based Solutions for Climate Change and Sustainability
eNGO	Environmental Non-Governmental Organization
ESG	Environmental, Social and Governance
ETS	Emissions Trading System
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FfBF	Finance for Biodiversity Foundation
FIs	Financial Institutions
FSC	Forest Stewardship Council
GBF	Global Biodiversity Framework
GBP	British Pound
GCP	Global Carbon Project
GDP	Gross Domestic Product
GEO	Global Environment Outlook
GESI	Gender Equality and Social Inclusion
GHG	Greenhouse Gases
GIIN	Global Impact Investing Network
GIZ	German Development Cooperation
G-SIB	Global Systemically Important Bank
GSS	Green, Social and Sustainability
I4CE	Institute for Climate Economics
ICAP	International Carbon Action Partnership
ICJ	International Court of Justice
ICMA	International Capital Markets Association
IDFC	International Development Finance Club
IDH	Sustainable Trade Initiative
IEA	International Energy Agency
IFRS	International Financial Reporting Standards
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
IPs	Indigenous Peoples
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ISIC	International Standard Industrial Classification
ISSB	The International Sustainability Standards Board
IUCN	International Union for Conservation of Nature

KPI	Key Performance Indicators
LCs	Local Communities
LDN	Land Degradation Neutrality
LEAP	Land Restoration and Environmental Action Plan
LSEG	London Stock Exchange Group
MAgPIE	Model of Agricultural Production and its Impact on the Environment
MDB	Multilateral Development Bank
MPA	Marine Protected Area
MSC	Marine Stewardship Council
MSCI	Morgan Stanley Capital International
NAP	National Adaptation Plans
NbS	Nature-based Solutions
NBSAP	National Biodiversity Strategy and Action Plan
NCFF	Natural Capital Financing Facility
NDC	Nationally Determined Contribution
NGFS	Network on Greening the Financial System
NGO	Non-Governmental Organization
NPI	Nature Positive Initiative
ODA	Official Development Assistance
ODF	Official Development Finance
OECD	Organization for Economic Co-operation and Development
OOF	Other Official Flows
PEFC	Programme for the Endorsement of Forest Certification
PES	Payment for Ecosystem Services
R&D	Research and Development
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RSPO	Roundtable on Sustainable Palm Oil
SBTN	Science Based Targets Network
SDGs	Sustainable Development Goals
SEEA	System of Environmental Economic Accounting
SFN	State of Finance for Nature
SLM	Sustainable Land Management
SNAT	Supranational Entities
SSC	Sustainable Supply Chain
TA	Technical Assistance
tC02e	Ton of carbon dioxide equivalent
TNC	The Nature Conservancy
TNFD	Taskforce on Nature-related Financial Disclosures
TRBC	The Refinitiv Business Classification
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
UoP	Use of Proceeds
VCM	Voluntary Carbon Market
WB	World Bank
UNEP WCMC	UN Environment Programme World Conservation Monitoring Centre
WEF	World Economic Forum
WRI	World Resources Institute
WWF	World Wide Fund for Nature

Executive Summary

The 2026 edition of the *State of Finance for Nature* highlights the urgent need to get the wheel turning on the 'Big Nature Turnaround'. This report sets out the latest numbers and offers a new approach to accelerate the urgent transition to phase out nature negative finance and to scale up investment in Nature-based Solutions (NbS) and nature – the Nature Transition X-Curve. Globally, finance flows continue to be heavily skewed toward nature-negative activities, which threaten ecosystems, economies and human well-being. Nearly half our global economy significantly depends on nature and yet governments, business and finance continue to erode our collective nature bank account.

Business-as-usual locks us deeper into further degradation of ecosystems, but governments, corporates, consumers and investors have the power to redirect flows and unlock resilience, equity and growth. In 2023, finance directly harmful to nature reached US$7.3 trillion, while investments in nature-based solutions (NbS) amounted to only US$220 billion – a ratio of more than 30:1 (Figure ES.1). To meet global commitments under the Rio Conventions, NbS investment must increase by more than two and a half times to US$571 billion by 2030, while harmful flows must be phased out and repurposed.[1]

1 The year of analysis (aggregation and comparison) for SFN 2026 is 2023. While some data is available for 2024, 2023 data is used as it the most recent year for which data is consistently available. Estimates are expressed in real 2024 US$. SFN 2023 was based on 2022 data.

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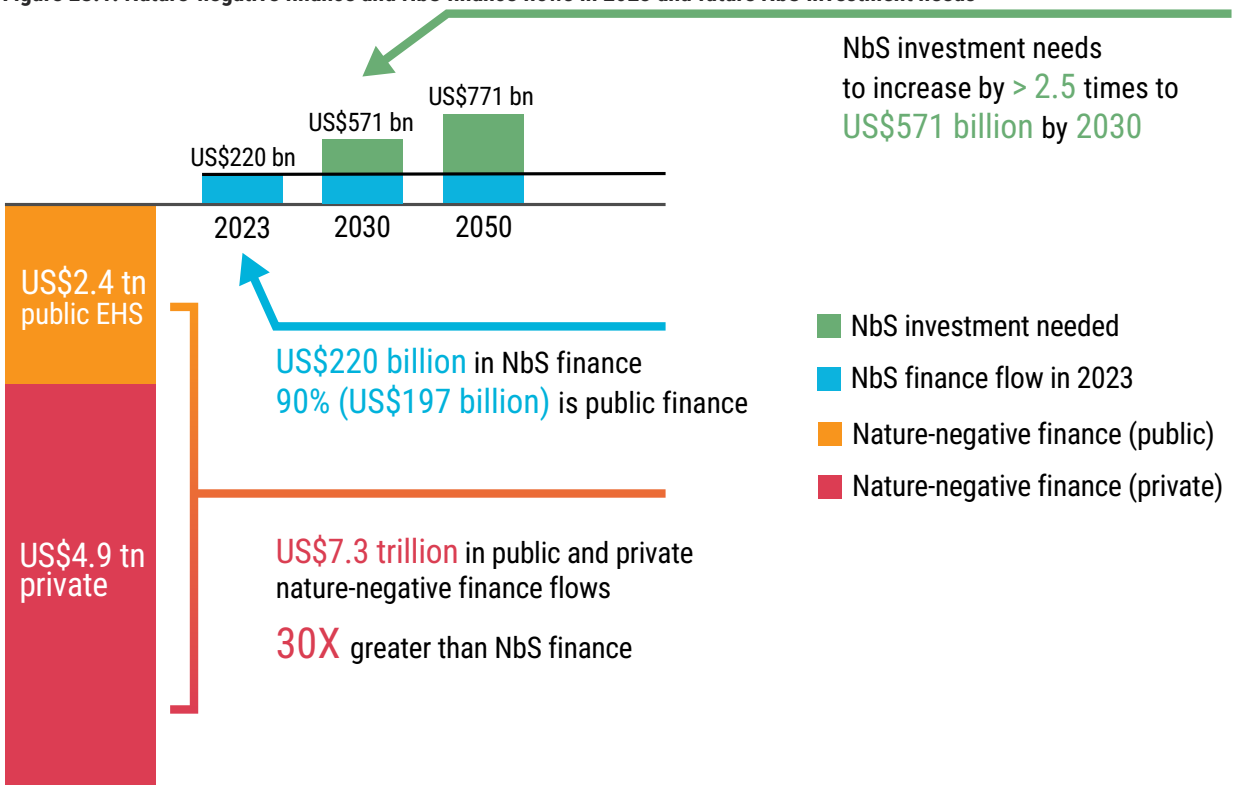
Figure ES.1: Nature-negative finance and NbS finance flows in 2023 and future NbS investment needs

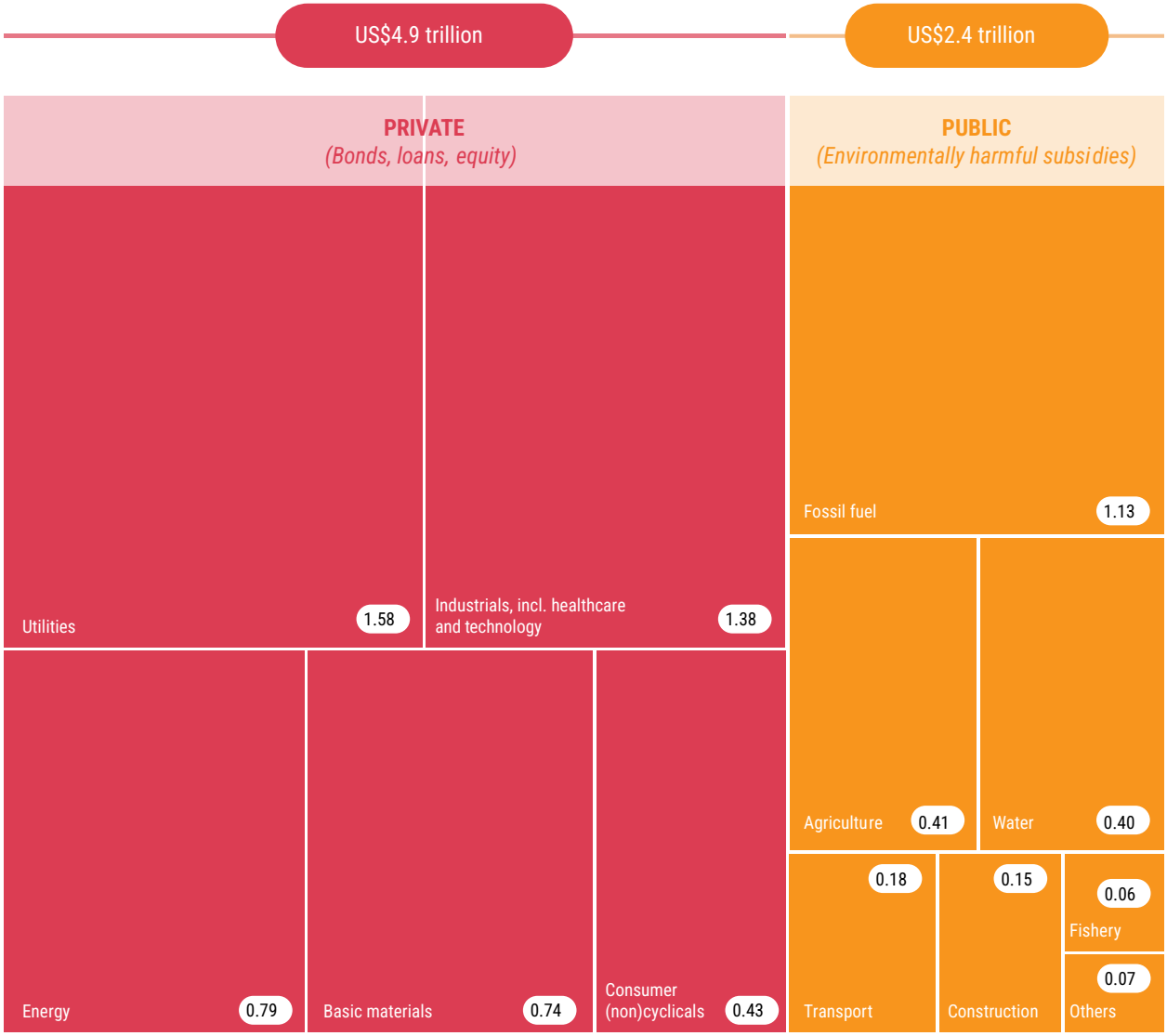


There is some good news. We understand better the scale of finance flows to NbS, in the space of billions of dollars, as well as the true scale of global nature-negative finance, in the space of trillions of dollars. There are signs of financial capital looking to better understand its dependencies, impacts, risks and opportunities (DIRO) related to nature, with over 730 adopters of the Taskforce on Nature-related Financial Disclosure (TNFD) representing assets under management of US$22.4 trillion. While not underestimating the severe degradation of nature, we should recognise the opportunities for growth that a transition towards nature-positive outcomes and finance can offer.

Nature-negative finance

Nature-negative finance remains the greatest obstacle to transition societies to become more nature positive. In 2023, US$7.3 trillion flowed into activities that directly damage nature – US$2.4 trillion in public subsidies for fossil fuels, agriculture and water use, and US$4.9 trillion from private capital concentrated in sectors such as utilities, industrials, energy and basic materials (Figure ES.2).

Figure ES.2: Nature-negative finance flows of 7.3 trillion in 2023 (trillion US$)



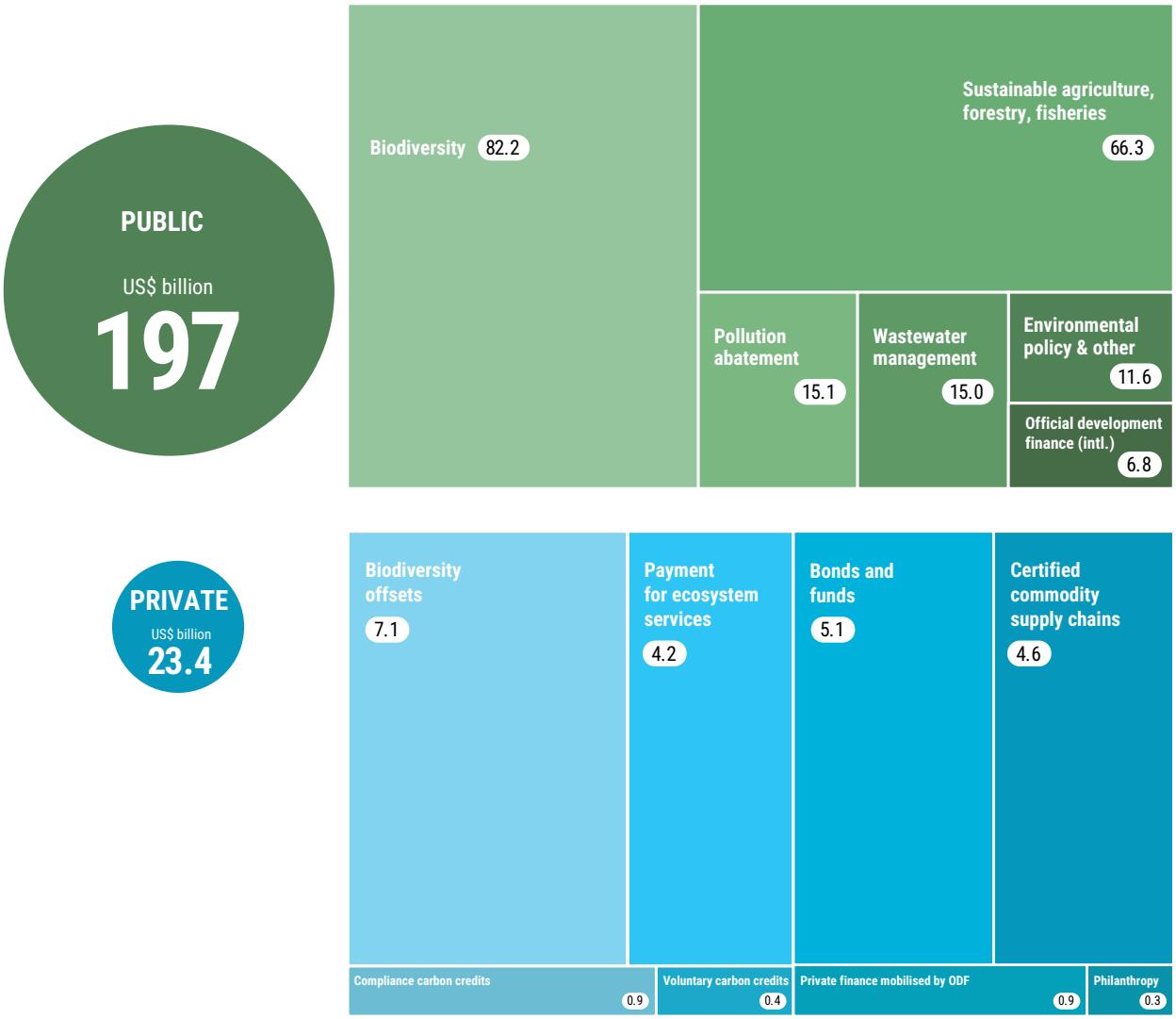
Note: Authors' calculations. Data for Environmentally Harmful Subsidies from IISD-OECD (2025), Organization for Economic Co-operation and Development (OECD) (2024a). Data for private finance flows based on Refinitiv/LSEG and ENCORE (2024).

These flows undermine progress on climate, biodiversity and nature restoration. Reforming and redirecting this capital are powerful levers for change. Cutting harmful subsidies and shifting private portfolios away from destructive activities can unlock resources and create space for NbS and nature-positive investment.

Nature-based solutions finance

Total finance for NbS reached US$220 billion in 2023, a five per cent increase since 2022. Public finance flows to nature-based solutions are eight times bigger than private finance flows.

Figure ES.3: Public and private finance flows to nature-based solutions of US$ 220 billion in 2023 (US$ billion)



Public finance

Public domestic expenditure is the largest source of NbS finance at US$190 billion in 2023 (up four per cent from 2022). Expenditure on biodiversity and landscape protection grew significantly (up 11 per cent), while support for agriculture, forestry and fishing fell. Despite its size, public domestic spending remains modest compared to environmentally harmful subsidies (EHS), which exceed US$2 trillion annually. Aligning national budgets with commitments to halt and reverse biodiversity loss, climate targets and land degradation neutrality, is critical for human well-being and sustainable economic growth.

Official Development Finance (ODF) for NbS continues to increase, reaching US$6.8 billion in 2023, a 22 per cent increase from 2022 and 55 per cent higher than in 2015. ODF remains a critical enabler for scaling NbS in developing countries. However, ODF budgets are under heavy pressure in 2024 and 2025 due to the geopolitical situation, which will likely constrain future flows.

Private NbS finance

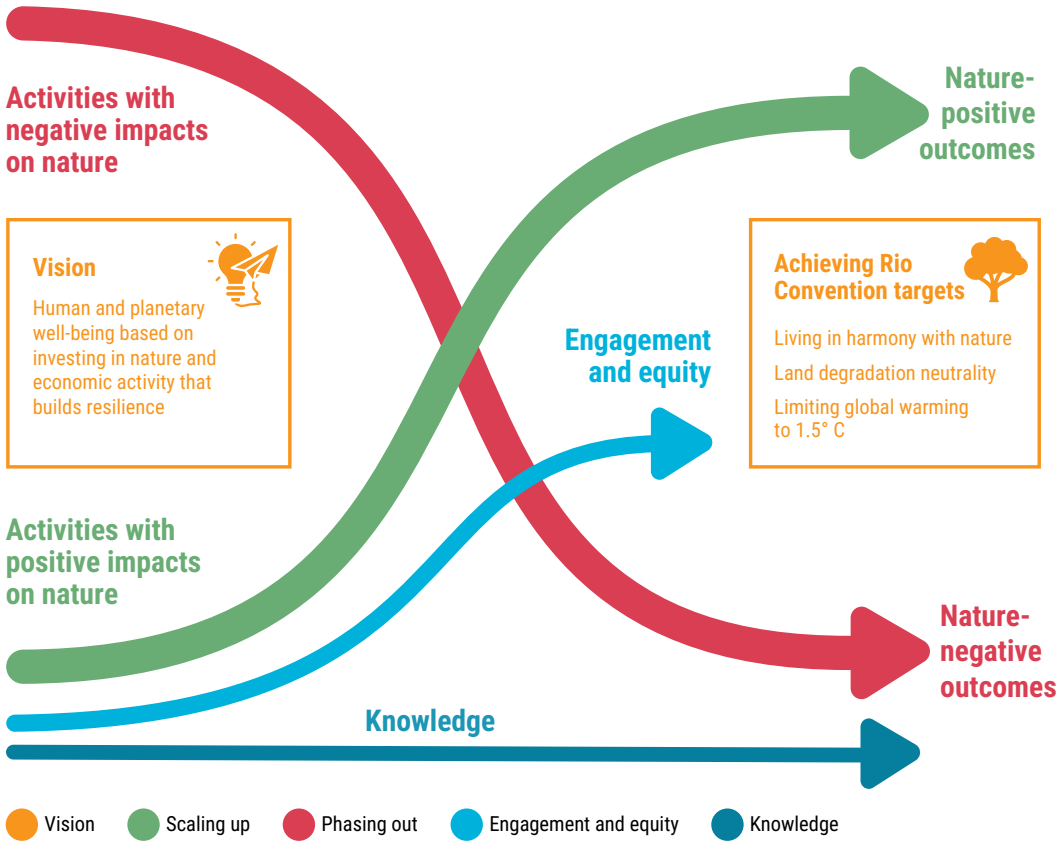
Private NbS finance of US$23.4 billion in 2023 remains small in absolute terms but shows positive momentum. Biodiversity offsets channelled over US$7 billion, certified commodity supply chains over US$4 billion,

biodiversity-related bonds and funds around US$5 billion and nature-based carbon markets US$1.3 billion. While modest compared to investment needs, these flows demonstrate strong potential. With the right enabling environment, standards and risk-sharing instruments, private capital could scale rapidly and become a game changer in closing the NbS finance gap. Mobilising private finance is essential to build a trillion-dollar nature transition economy.

Policy and transition

Getting the wheel turning on the 'Big Nature Turnaround' requires a decisive shift in how finance is allocated. The Nature Transition X-Curve illustrates the dual challenge of phasing out harmful finance while scaling up NbS. This is not just an environmental agenda but an economic transformation: redirecting harmful subsidies, integrating NbS into fiscal frameworks and mobilising private finance to redirect sectors towards resilience and long-term value creation.

Figure ES.4: Transition pathways to nature-positive outcomes



Key priorities for action include:

- Reforming harmful subsidies and aligning budgets with Rio Convention goals.
- Scaling government investment in NbS, particularly public goods.
- Government regulation and incentives to align investment with the value of nature and its services.
- Mandating disclosure of nature-related risks and impacts to shift incentives.
- Expanding blended finance and de-risking instruments and developing high integrity nature markets to mobilise private capital at scale.

The transition requires leadership, policy reform and coordinated action across governments, financial institutions and companies in the real economy. Applying the X-Curve as a roadmap for change can help identify transition pathways, sequencing and investment priorities. Turning the wheel towards nature-positive finance is essential: to meet 2030 targets under the Rio Conventions, to safeguard ecosystems and livelihoods and to build resilient, inclusive and sustainable economies for the future.

1 Setting the scene

The global community has a window of opportunity to spark a 'Big Nature Turnaround' by 2030. Why now? Because there has never been greater awareness of the nature crisis – its underlying causes, the severity of its impacts and material implications for governments, citizens, businesses and financial institutions. The reality is stark: without nature, the foundation of our economy collapses. Since 1970, 73 per cent of nature's wildlife populations have vanished (Worldwide Fund for Nature [WWF] 2024). With at least half our economy moderately or highly dependent on services from nature (World Economic Forum [WEF] 2020; Evison *et al.* 2023), we continue to erode our collective natural bank account.

However, this trajectory can be reversed through forward-looking strategies and a clear vision that safeguard the health of the planet and the well-being of current and future generations. Governments and business leaders can embed nature into key economic sectors – unlocking what could become a trillion-dollar nature transition economy. Investment in nature-based solutions (NbS) is the 'maintenance bill' for keeping natural infrastructure going through protection, sustainable use and restoration.

The State of Finance for Nature (SFN) 2026 report builds on the call of SFN 2023 for a 'Big Nature Turnaround' – to repurpose trillions in global investment away from nature-destructive activities towards nature-based solutions. To spur the urgent action needed, this report provides a snapshot of where we are now and introduces a Nature Transition X-curve framework to identify what activities must be phased out and what can be scaled up to begin this turnaround.

Future SFN reports will focus on tracking progress. Real action involves identifying and investing in nature-positive opportunities across all sectors of the economy, not confining action to the usual

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realm of NbS in forestry, agriculture and landscape restoration. In 2030, SFN aims to provide a stocktake of how finance from governments, corporates and financial institutions is doing on the journey to meet the nature-related goals of the three Rio Conventions[1], particularly Global Biodiversity Framework (GBF) goals.

Now is the time to assess where we stand and how to set the 'Big Nature Turnaround' in motion.

1.1 Is the world on track?

This report is published at a time of enormous geo-political instability and challenges. Financing of economic activity in the global economy continues to significantly harm nature. Poor management of nature's wealth is driven by entrenched systems of production, energy and infrastructure that damage and extract from nature (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES] 2019). Agricultural expansion to increase food supply in the short term often degrades soil fertility, water availability and ecosystem resilience, reducing long-term productive capacity and food security (Moretti *et al.* 2025). Persistent financing of activities that harm nature accelerates the degradation of nature and exacerbates inequalities (United Nations Environment Programme [UNEP] 2016).

The climate crisis continues to unfold at alarming speed. The planet experienced its hottest year on record in 2024 (United Nations [UN] 2025). Current policies put us on a trajectory of temperatures increasing more than 2.5°C above pre-industrial levels by the end of the century (UNEP 2024). Increases in temperature could reduce global Gross Domestic Product (GDP) by up to 15 per cent by 2050 (Network for Greening the Financial System [NGFS] 2024), significantly higher than previous estimates. Droughts are projected to affect three in four people by 2050 and combined damage costs of land degradation, desertification and drought (DLDD) amount to at least US$878 billion each year (International Union for Conservation of Nature [IUCN] 2025). Seven of nine planetary boundaries have been transgressed – the planet is now outside a safe operating space for humanity (Planetary Boundaries Science 2025).

However, policies and frameworks to ensure the assessment and disclosure of nature dependencies, impacts, risks and opportunities (DIRO) by business and finance are being developed through initiatives such as the Taskforce on Nature-related Financial Disclosure (TNFD) and Nature Positive Initiative (NPI). In many regions of the world, actions are being implemented to reduce and manage negative impacts on nature. This trend is reinforced by growing financial investment in nature, with NbS contributing to tackling global challenges and to nature-positive outcomes.

In some jurisdictions, the fiduciary duty of finance leaders to accept environmental risks and challenges is being challenged in the courts. In others, hard-fought environmental regulations are being undermined, creating uncertainty and potentially inaction. Despite this, there are grounds for optimism based on greater awareness, better data and growing commitment among leaders to transition, which can provide the foundation for accelerated action and investment to support a nature-positive future.

1.2 How this report helps

SFN provides a financial assessment and technical analysis that supports policymakers, businesses, financiers and civil society to make informed decisions about investing in NbS and reducing nature-negative capital flows. It was created to provide up-to-date information and to detect trends in public and private investment for NbS, placing these in the context of systemic capital shifts needed to meet global goals on biodiversity, climate and land. While the report may appear technical, we encourage readers to interpret the findings by imagining what a more climate resilient and nature-positive society looks like and how it can become a reality through changes in fiscal policies, public policy, procurement and capital expenditure decisions.

1 United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD) and United Nations Convention to Combat Desertification (UNCCD).

SFN reports track investment in NbS**,** which are activities that deliver net gains for biodiversity and nature contributing to nature-positive outcomes. NbS involve protecting, managing and restoring nature to address societal challenges and benefits for biodiversity, climate and people. NbS include "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits" (UNEP 2022).

1.3 Recognising the potential of nature-based solutions

NbS are critical for achieving the societal goal of the Global Biodiversity Framework (GBF) to *"halt and reverse nature loss by 2030 on a 2020 baseline and achieve full recovery by 2050".* Investing in NbS contributes to nature-positive outcomes and to the societal goal of the GBF. NbS are explicitly positioned by UNEP as a bridge across the objectives of all three Rio Conventions:

United Nations Framework Convention on Climate Change	NbS provide adaptation and mitigation benefits, for example, through carbon sequestration, flood protection and climate-resilient landscapes.
Convention on Biological Diversity	NbS restore and protect biodiversity and ecosystem services, integral to deliver the GBF.
United Nations Convention to Combat Desertification	NbS address land degradation by promoting sustainable land management and restoration practices that halt desertification and enhance ecological productivity.

This report frames NbS as key contributions to nature-positive outcomes. Strategies to achieve nature-positive outcomes must build from the approach of the mitigation (and conservation) hierarchy. By rooting nature-positive ambitions in the mitigation hierarchy, conservation, policy and finance initiatives can avoid the risks of weak implementation and "net gain" claims that do not stand up to scientific scrutiny (Maron *et al.* 2024).

NbS can be highly cost-effective interventions, particularly when the multiple public and private benefits of ecosystem services are accounted for. A review of NbS for disaster risk reduction found that in 65 per cent of projects NbS were more effective in reducing hazards compared to engineering-based solutions (Vicarelli *et al.* 2024). NbS can also deliver competitive returns - restoring degraded lands can yield US$ 7–30 for every dollar invested (Verdone *et al.* 2017). When designed with a gender lens, NbS can enhance women's livelihoods, strengthen food and water security and amplify the local knowledge systems of Indigenous Peoples (IPs) and local communities (LCs) that are essential for long-term success of ecological restoration (UNEP Finance Initiative [UNEP FI] 2025).

Recognition of nature's opportunity in all sectors of the economy is expanding. Ask most banks and investors what investing in nature means to them and they will most likely be thinking of "bees, trees and farmers". In fact, nature investment opportunities are far broader including food systems, utilities, construction, infrastructure, extractives, chemicals and other 'real economy' sectors. Other than in a few dedicated funds and loan products, recognition of these opportunities in the finance sector is weak but is set to grow supported by existing and forthcoming guidance from NPI, TNFD, Global Canopy and others. Whilst NbS have focused on the forestry, infrastructure and agriculture sector, investable opportunities that use products or services from nature are becoming far more widespread. Governments too should take account of these emerging opportunities and seek ways to foster them.

Take for example the construction industry. At a start-up scale, the use of bacteria infused into concrete is enabling it to 'self-heal' by repairing cracks with limestone that the bacteria create, potentially extending the life of buildings and

reducing costs (Rajadesingu *et al.* 2024). Sponge cities currently create floodable wetlands, city parks and permeable pavements to absorb water from storms, avoiding overwhelming drainage systems unable to cope with floods (Mirsafa *et al.* 2025). In apparel, fungi are being transformed into leather products to create footwear that can be digested in waste once discarded (Jones *et al.* 2020; Amobonye *et al.* 2023). In the future, precision fermentation and vertical farming threaten to disrupt traditional food value chains (Gao *et al.* 2025), delivering high quality produce near or within cities, avoiding air miles, carbon-based energy and synthetic pesticides. Innovations such as these offer significant investment opportunities in sectors that investors are familiar with and can increase the attraction of nature as an asset class for finance, whilst potentially reducing impacts on nature by, for example creating food without land or by using nature in cities to prevent floods.

Awareness and action in the financial sector are rising. While investing in NbS is essential, to turn the wheel to prevent further nature loss requires the urgent reallocation of global capital at a much broader scale. Reaching climate, biodiversity and land targets requires tackling the US$7.3 trillion in finance that drives nature-negative outcomes. This demands action beyond traditional NbS, across food systems, utilities, construction and other high-impact sectors. Finance flows that support nature-negative outcomes need to be reduced and phased out, while NbS and finance with nature-positive outcomes is phased in and scaled up.

Finance, business and regulators are beginning to identify, assess and address dependencies, impacts and risks and opportunities related to nature. The banks and supervisors Network for Greening the Financial System (NGFS) acknowledges that nature-related financial risks can have significant macroeconomic implications, and that failing to identify, mitigate and adapt to these risks poses a serious threat to financial stability (NGFS 2022; NGFS 2024). This recognition is driving policies requiring corporates and financial institutions to assess and disclose impacts and dependencies on nature and the development of integrated climate-nature transition plans e.g. the European Union (CSRD). While most investors acknowledge the need to integrate impacts and dependencies on nature into financial decision-making (International Financial Reporting Standards [IFRS] 2025), many more must assess and disclose their natural capital impacts and dependencies (Trim *et al.* 2025).

The TNFD provides guidance on assessments and transition planning. Over 730 organizations are now registered as TNFD Adopters to use its reporting and risk management framework, including 179 financial institutions representing US$22.4 trillion in assets under management and 25 per cent of the world's systemically important banks (G-SIB). These developments, along with recent advisory opinion by the International Court of Justice (ICJ) on the obligations of States related to environmental protection and human rights (ICJ 2025), signal rising risks of litigation if impacts on nature are not addressed as part of transition plans, provide a basis to reduce nature-negative capital flows.

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1.4 Redefining the role of the private sector

A fundamental paradigm shift is beginning to emerge in how we conceptualise private finance's role in causing the degradation of nature across sectors and its opportunity to restore nature and enhance its sustainable use. The most significant opportunity lies in halting ongoing environmental degradation across existing business operations. This represents a more pragmatic and scalable approach: minimising negative impacts while strategically investing in transitional opportunities that align financial returns with environmental outcomes.

The focus on impact mitigation finance, encompassing sustainable supply chain investments, circular economy initiatives and financing for companies transitioning away from harmful practices, recognises a critical economic reality: preventing environmental damage is typically more cost-effective than attempting restoration after irreversible loss occurs. This approach opens substantial markets in emerging nature-positive sectors, including clean technology, sustainable materials and regenerative agriculture, where private capital can simultaneously drive innovation and scale solutions.

Learning from climate finance evolution

The biodiversity crisis demands an urgent transformation in how we mobilise financial resources for environmental protection. Unlike climate finance, which had decades to develop sophisticated frameworks and markets, nature-related finance must accelerate rapidly to address the alarming pace of ecosystem degradation and biodiversity loss. This report examines how private sector financial institutions and corporates in the real economy can effectively channel unprecedented interest in nature towards strategies that can steer their portfolios within planetary boundaries.

The climate finance sector's development of "financed emissions" methodologies provides a crucial template for understanding the nature-related impact of financial portfolios. UNEP FI has developed practice targets for banks and is piloting impact targets that advance beyond operational improvements to measurable outcomes for nature. Combined with the Science-based Targets for Nature (SbTN) and Finance for Biodiversity Foundation (FfBF) work with investors, this work is moving the financial sector towards a standardised, consistent and robust equivalent for nature of financed emissions metrics at a whole of portfolio level.

Evolving understanding of nature finance

A persistent challenge that undermines progress is the disconnect between how different actors, particularly finance institutions and companies, understand 'nature finance' compared to the conservation community. Different definitions, measurement approaches and expectations create barriers and missed opportunities that must be addressed. The narrative around finance for nature has evolved with the emphasis shifting from finance for restoration activities towards the much greater task of comprehensive economic transformation aligned with net-zero, nature-positive and social justice outcomes. This evolution emphasises the need for a much more significant transformation of how governments, companies and financial institutions value natural assets and integrate nature-related considerations across portfolios and decision-making processes.

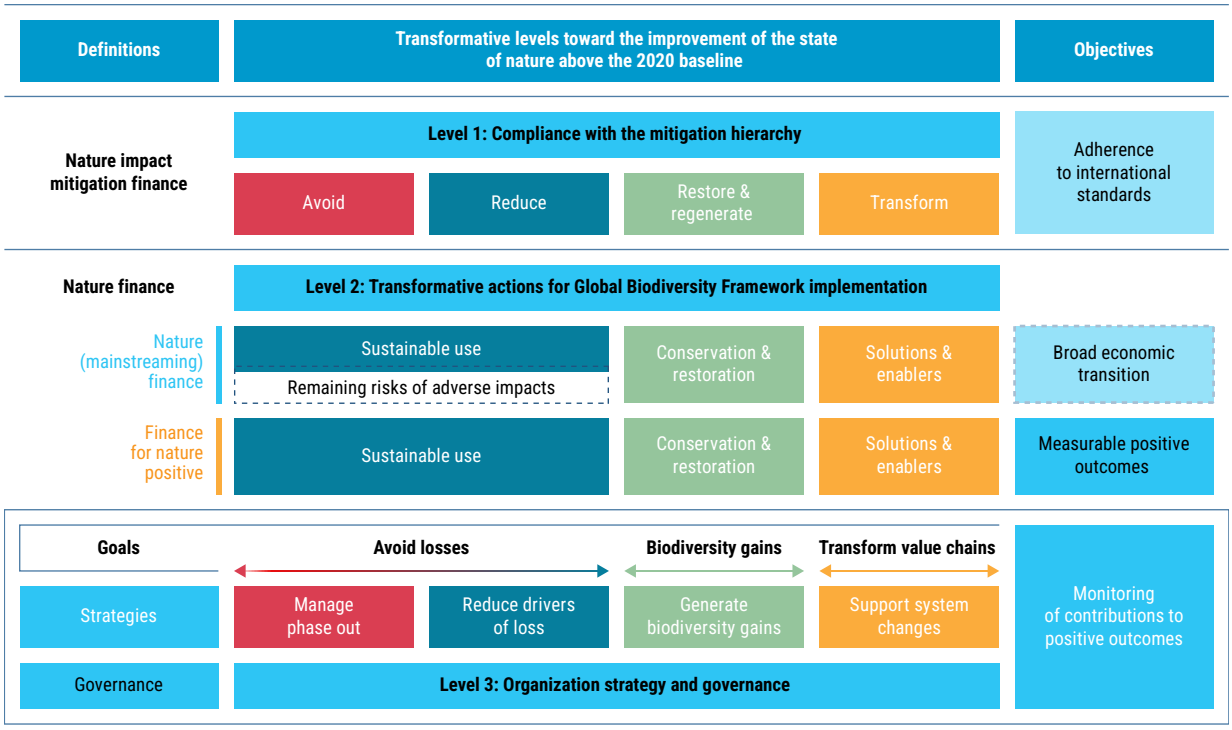
This landscape has undergone substantial refinement in recent years, with sharper definitions, more sophisticated stratification of nature-related strategies, new asset classes supporting nature investment or mainstreaming and increasingly rigorous scrutiny of instruments like offsets and other market mechanisms. A particularly significant development has been the recognition of transition finance as a critical component to reach nature goals, akin to net-zero transition finance. While absent from earlier SFN reports, transition finance is now understood as essential for addressing the challenge of systemic economic transformation needed to stay within planetary boundaries.

These conceptual advances are depicted in the 'Finance for Nature Positive' working model (Figure

1), which offers a complementary framework, based on impact, to SFN's activity-based categorisation. This layered model emphasises the contribution of financial activities toward the societal nature-positive goal, focusing on transformative strategies, mitigation measures, whole-of-portfolio coherence and enabling systemic change. The model structures nature-related financial opportunities and asset classes by their contribution to nature positive via three transformative levels:

- *Compliance with the mitigation hierarchy*: Finance to avoid or manage adverse impacts e.g. "do no harm", basic regulatory compliance, ESG screening, offsets if required by law.
- *Transformative actions for GBF implementation*: Direct finance contributing to positive outcomes e.g. sustainable use, active restoration, measurable biodiversity gains, solutions that transform value chains.
- *Organizational strategy and governance*: Asset classes and activities structured into coherent portfolios that shift value chains at scale. Coherence between the portfolio-level strategy and individual transactions supported through target-setting and metrics.

Figure 1: "Finance for nature-positive" working model



Source: UNEP FI and FfBF 2024

SFN 2026 maintains continuity with earlier editions, definitions and scope while acknowledging the ongoing debates and momentum toward harmonising definitions across different user groups and jurisdictions. This report deals with only two categories within the nature finance spectrum:

- **Finance for NbS:** targets investments in projects using natural systems to address societal challenges, such as carbon sequestration via reforestation, generating measurable environmental outcomes alongside financial returns.
- **Nature-negative finance** comprises finance that directly harms nature and should be phased out or redirected.

The report does not explicitly cover Impact Mitigation Finance, Mainstreaming Finance or Transition Finance due to the absence of agreed global definitions and limited data availability. Impact Mitigation Finance focuses on reducing negative environmental impacts across existing portfolios, including financing for companies transitioning from harmful practices and supporting circular economy initiatives. Transition Finance supports the fundamental transformation of high-impact sectors toward nature-positive practices, financing their evolution rather than divesting from problematic industries. While Mainstreaming Finance integrates nature considerations into all financial decision-making processes, embedding biodiversity factors into standard risk assessment and portfolio construction, these concepts lack the definitional consensus seen in climate-related finance.

Although Multilateral Development Banks (MDBs) are beginning to track some of these flows with varying interpretations, the absence of standardised frameworks prevents comprehensive assessment. Despite this data gap, these financing approaches remain fundamental to achieving the 'Big Nature Turnaround' and merit inclusion in future iterations as definitions and tracking mechanisms mature.

1.5 Nature Transition X-curve and the 'Big Nature Turnaround'

A 'Big Nature Turnaround' is urgently needed to repurpose the US$7.3 trillion of nature-negative finance from public and private sources. In Chapter 5 we introduce the Nature Transition X-Curve as a tool to help governments, finance, business and civil society to plan transition pathways towards a nature-positive economy.

The remainder of this report builds on the urgent need to turn the wheel away from nature-negative activities, to scale NbS and transition finance planning across all sectors of the economy and to get on a pathway towards nature positive outcomes. Chapter 2 assesses public and private finance flows that have a direct negative impact on nature, including public subsidies and private capital. Chapter 3 assesses the state of finance for NbS. Chapter 4 estimates the investment needed to limit climate change to 1.5°C, reach 30by30 and land degradation neutrality by 2030. Finally, Chapter 5 explores how to phase out nature-negative finance across the economy, and how to scale up transition finance, including through NbS finance and to drive the system changes needed for a nature-positive future.

2 Tracking nature-negative finance

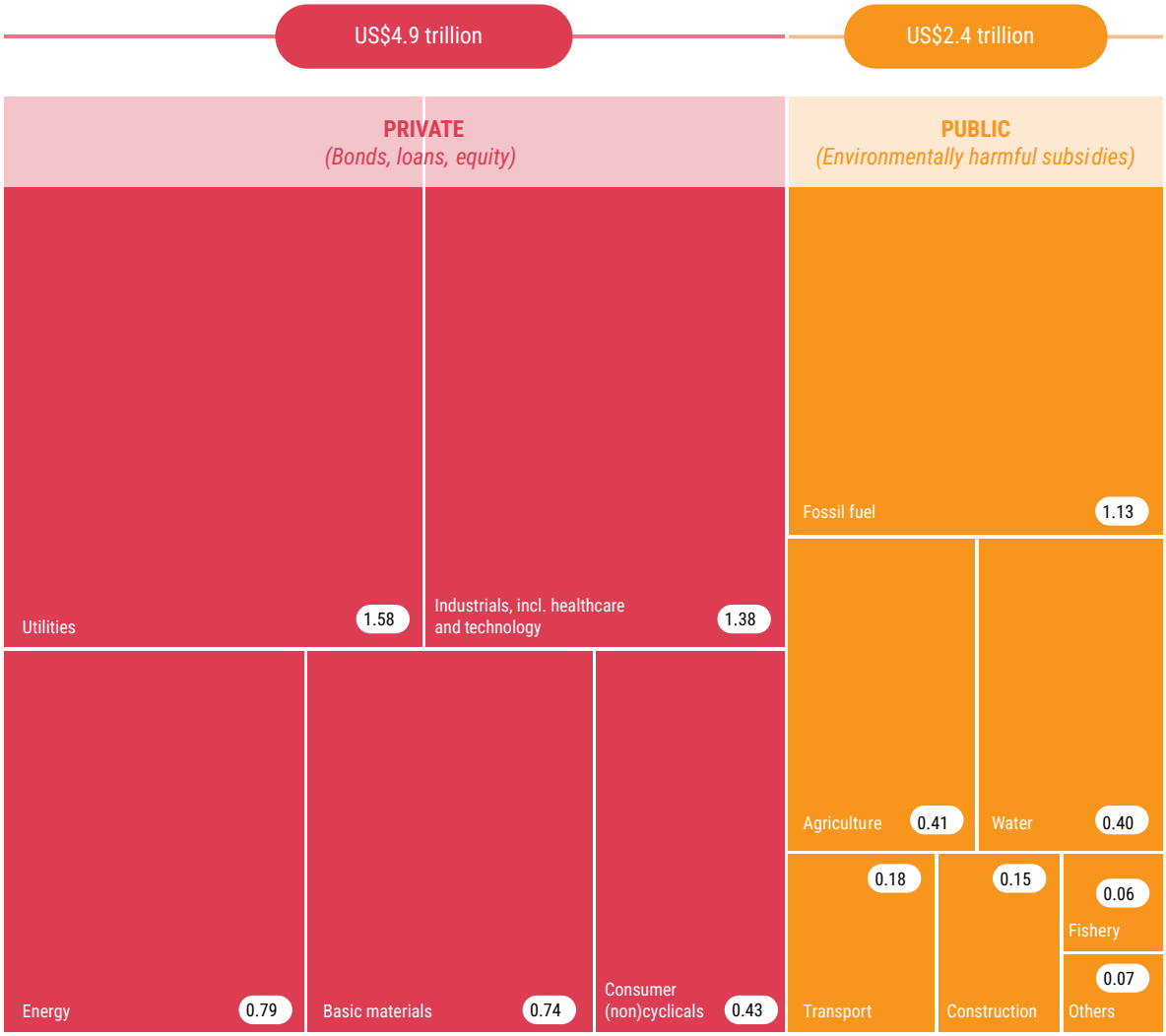
This chapter provides an overview of global finance flows that contribute to nature-negative outcomes, including public finance through environmentally harmful subsidies (EHS)[1] and private finance and investment in sectors with direct negative impacts on nature.[2]

Annual finance flows from public and private sources that have a direct negative impact on nature are estimated at US$7.3 trillion in 2023 (Figure 2). Public finance flows through EHS are roughly US$2.4 trillion and are dominated by subsidies to fossil fuel (US$1.1 trillion), followed by agriculture and water (both US$0.4 trillion) and significant support to transport, construction and fisheries. Private nature-negative flows of around US$4.9 trillion are heavily concentrated in a few high-impact sectors: utilities (US$1.6 trillion), industrials (US$1.4 trillion), energy (US$0.7 trillion) and basic materials, including fertilizers and agricultural inputs (US$0.7 trillion). Private nature-negative flows account for two-thirds of nature-negative flows in 2023.

1 Environmentally harmful subsidies are defined as finance flows from government policies or programs that encourage unsustainable production or consumption and harm nature through resource depletion, ecosystem degradation or adverse impacts on planetary health (Reyes-Garcia 2025). Direct public expenditure and procurement causing environmental harm are not included due to data limitations.

2 The year of analysis (aggregation and comparison) for SFN 2026 is 2023. While some data is available for 2024, 2023 data is used as it the most recent year for which data is consistently available. Estimates are expressed in real 2024 USD.

Figure 2: Nature-negative finance flows of US$7.3 trillion in 2023



Note: Authors' calculations. Data for Environmentally Harmful Subsidies from IISD-OECD (2025), OECD (2024a). Data for private negative finance flows from London Stock Exchange Group (LSEG) and ENCORE (2025).

Public subsidies and private investments often reinforce each other, locking private capital into nature-negative sectors such as the fossil fuel industry. A significant share of private nature-negative investment flows into industries that receive substantial public support through environmentally harmful subsidies. These subsidies include below-market prices for government-provided goods and services that harm nature, for example, free or underpriced water that depletes aquifers for irrigation. Private finance in nature-negative sectors benefits indirectly from fossil fuel subsidies, as cheap energy cascades through the economy by reducing the costs of fertilizers and pesticides (Victor 2009).

2.1 Public nature-negative finance

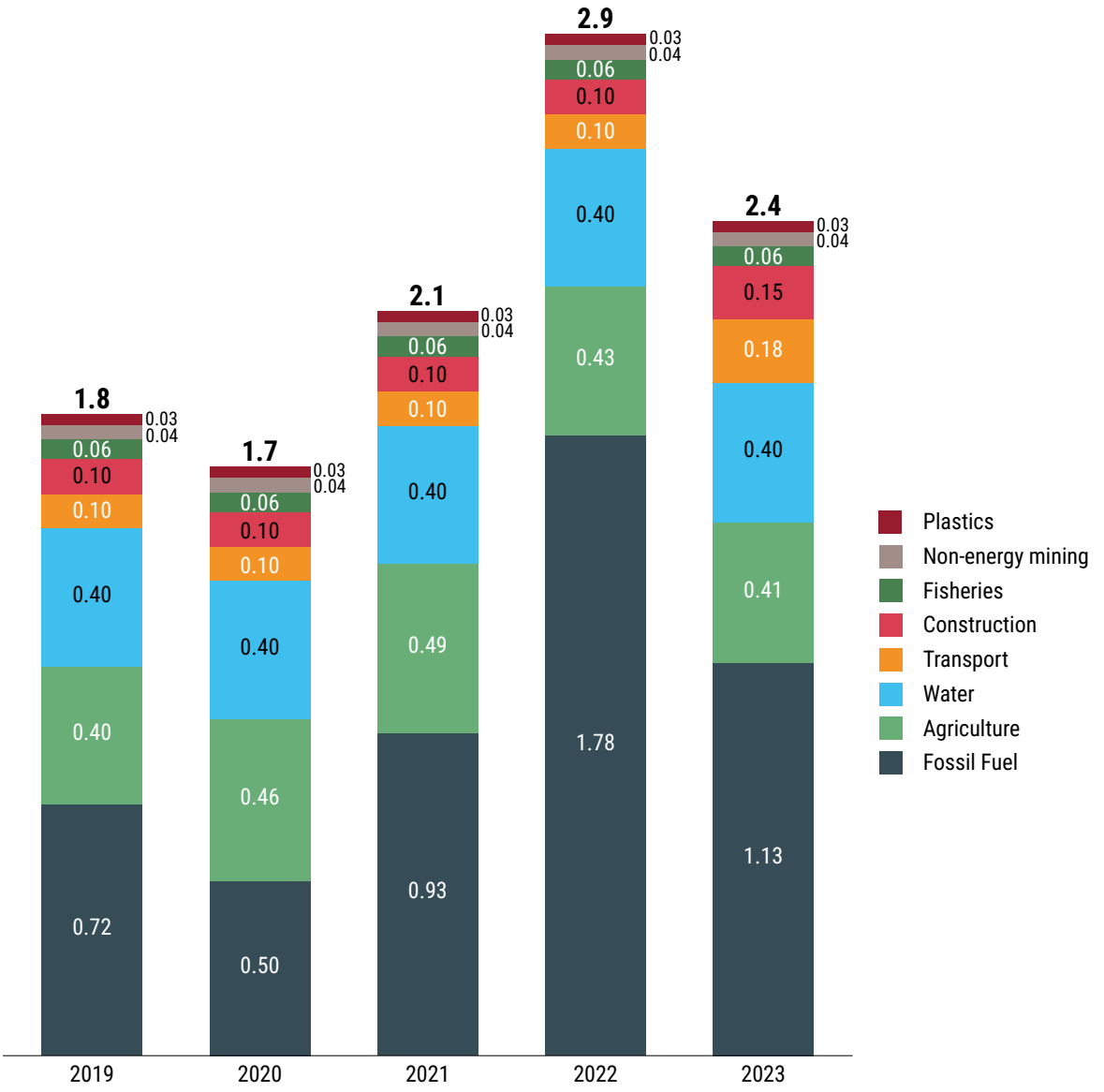
Public finance flows to EHS are estimated at US$2.4 trillion in 2023, down 18 per cent from historically high levels in 2022 (Figure 3). The fossil fuel sector received the largest share (47 per cent) of EHS followed by agriculture and water (17 per cent each).

The decline in 2023 levels of EHS is attributed to a reduction in fossil fuel subsidies. Fossil fuel subsidies had almost doubled from 2021 to US$1.78 trillion in 2022[3] due to the energy crisis

3 IISD-OECD (2025) estimate based on OECD, IEA and IMF includes only explicit subsidies, e.g. subsidies that undercharge on supply costs. A higher estimate of US$7 trillion in 2022 from IMF (2023) includes implicit subsidies, e.g. subsidies that undercharge for negative externalities such as global warming and air pollution.

triggered by the Russian Federation's invasion of Ukraine (International Energy Agency [IEA] 2023). Governments across Europe and the United States of America increased consumption subsidies to protect households and industry from the adverse impacts of rising energy prices. Although some measures have been phased-out, fossil fuel subsidies remain more than double 2020 levels due to inertia in support structures despite international agreements on phase out.

Figure 3: Public finance: Environmentally harmful subsidies, 2019–2023 (trillion US$)



Note: Authors' calculations. Data from IISD-OECD Fossil fuel subsidies tracker (2025), OECD (2024a; 2024b) and EarthTrack (2022; 2024).

Agricultural EHS include direct and indirect transfers that artificially raise crop prices or promote overuse of inputs like fertilizers or pesticides, leading to unsustainable agricultural practices, overproduction, land conversion and deforestation. While agricultural EHS have declined slightly since 2021, they remain above 2019 levels.

EHS take many forms across jurisdictions and sectors, including cash transfers, tax breaks, below-market pricing, liability caps, regulatory exemptions and preferential credit (de Bruin *et al*. 2023). Table 1 provides some examples of EHS with types of fiscal support that drive trillions in public nature-negative finance.

Table 1: Environmentally harmful subsidies by sector

Fossil fuels		Subsidies on production and consumption, exemptions on fuel taxes, underpriced energy.
Agriculture		Support that raises the price of output beyond the market price, output subsidies conditional on achieving a high-level of output, synthetic fertilizer and pesticide subsidies – altogether keeping production and input use artificially higher, exacerbating the pressure on environment from agriculture.
Fisheries		Fuel subsidies for fishing fleets, subsidies for fleet capacity expansion, below market usage fees for ports encouraging overfishing.
Water		Under-pricing of water for irrigation and industrial uses, cost-recovery based utility rates leading to unsustainable extraction and consumption of water.
Transport		Underpriced road use, maritime and aviation taxes, incentives on vehicle purchases.
Construction		Tax breaks, energy subsidies for cement/steel industries.
Plastics		Subsidies on non-energy inputs such as feedstock chemicals.

In addition to EHS, public finance to nature-negative activities includes direct investment in infrastructure, housing, dams and extractive industries. Selomane *et al.* (2025) estimate nature negative government expenditure at US$245 billion in 2022 based on public domestic expenditure in sectors identified as nature negative: agriculture, forestry, fishing and hunting; fuel and energy; and mining, manufacturing and construction. As subsidies to these sectors are captured in the sectors covered above, they are not included separately in this analysis.

Determining how subsidies can be repurposed to support sustainable outcomes is a challenge – many harmful subsidies are embedded in policies and hard to isolate. Efforts to remove or redirect subsidies often face structural barriers, e.g. subsidies may be entrenched in tax or fiscal systems (Clingendael International Energy Programme [CIEP] 2020). Efforts to reform subsidies must consider social equity in addition to environmental impact. Gender responsive fiscal reform, such as redirecting fossil fuel subsidies to clean cooking initiatives or regenerative agriculture programs targeted at women smallholders can improve both environmental and gender outcomes (International Institute for Sustainable Development [IISD] 2016). Chapter 5 explores the policies and actions needed for politically feasible reform and a just transition.

2.2 Private nature-negative finance

Private nature-negative finance is estimated at US$4.9 trillion in 2023.[4] Despite growing recognition of the materiality of biodiversity and climate risk, private nature-negative investment remained persistently high at roughly US$5–6 trillion from 2020 to 2023, suggesting limited progress in decoupling capital from nature degradation (Figure 4).[5] In 2024, private nature-negative finance increased by 12 per cent to US$5.5 trillion.[6]

Private nature-negative finance is highly concentrated in a few sectors. Utilities absorbed the largest share at US$1.6 trillion, followed by industrials (US$1.4 trillion). Basic materials reached US$0.7 trillion, including construction, metal, mining and chemicals as key drivers of nature-negative outcomes. The magnitude and distribution of these finance flows highlight the need to reallocate capital from infrastructure-heavy and resource-extractive sectors to reduce systemic nature risk.

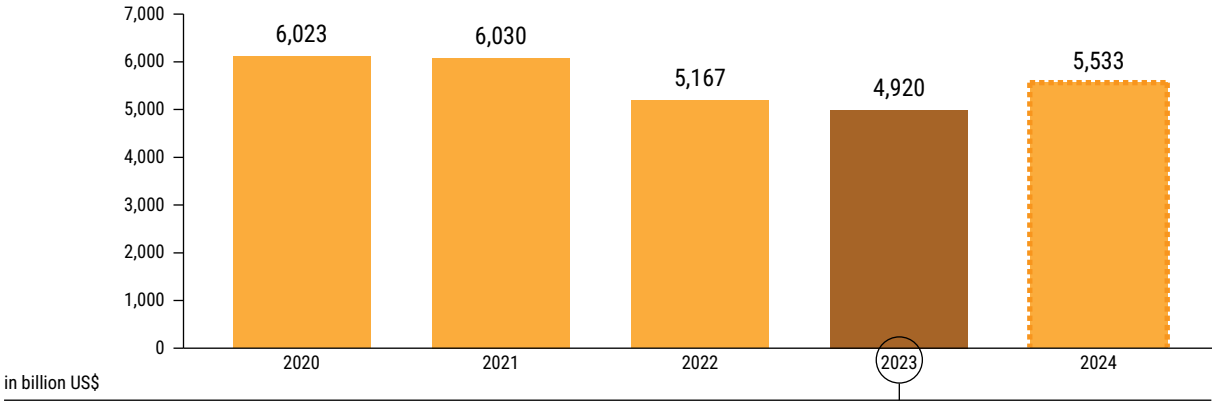
On a positive note, private investment harmful to nature such as oil and gas investments declined from US$990 billion in 2020 to US$519 billion in 2023, reflecting a 48 per cent decrease over four years. This trend is consistent with growing recognition of nature-related risks as material to financial stability (NGFS 2022; IPBES 2024) and the decreasing costs of renewable energy production (Luderer *et al*. 2021; Intergovernmental Panel on Climate Change [IPCC] 2022.

4 Financial sector excluded. Estimates are likely underestimated. Private investment in infrastructure projects in primary markets has been stagnant for eight years running at between US$150 billion to US$175 billion from 2017-22 (Global Infrastructure Hub based IJ Global data).

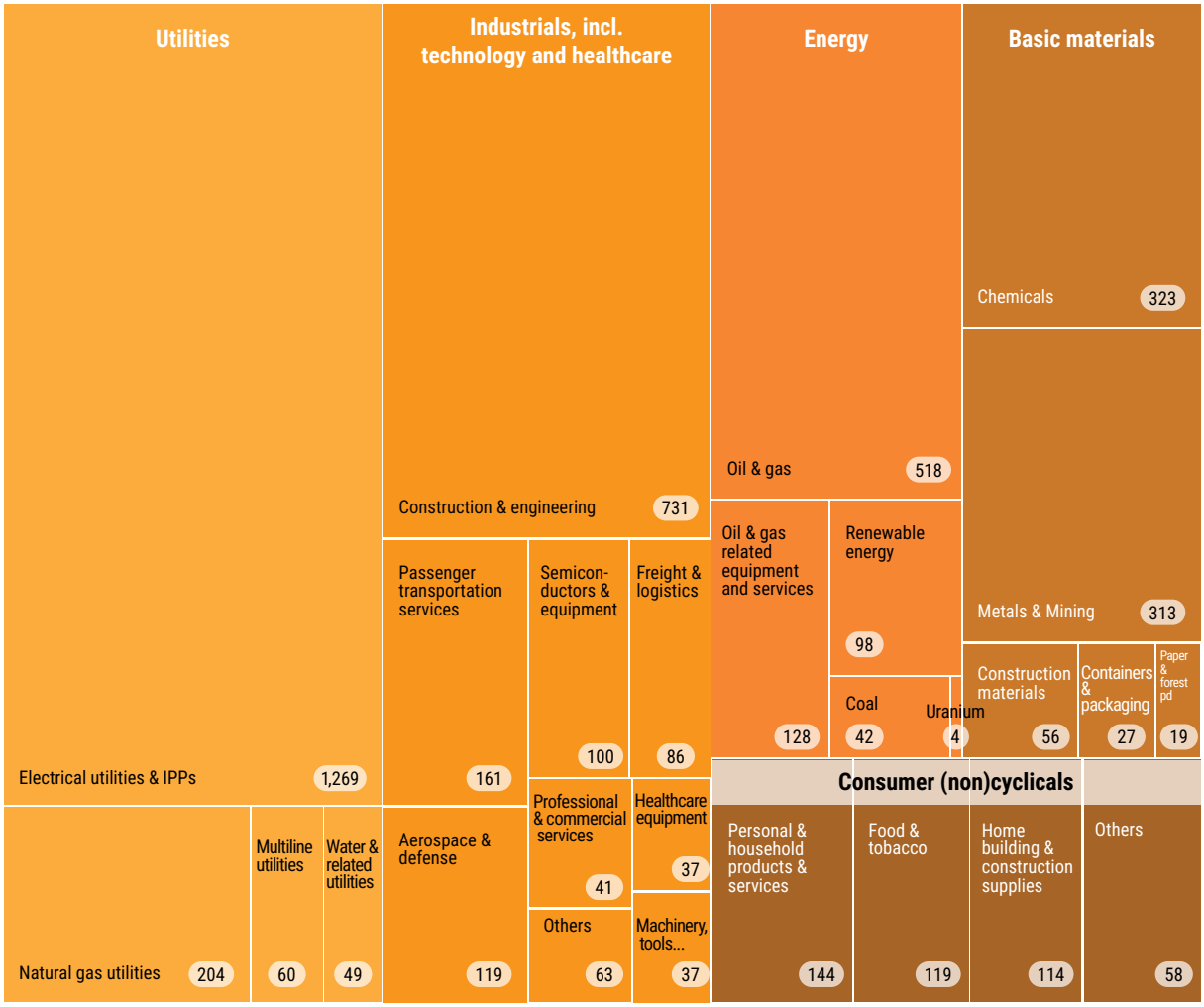
5 Estimates based on global private capital investment data from 2020–24, grounded in a standardised materiality assessment (ENCORE 2025), which evaluates the environmental impact of economic activities based on pressure indicators (see technical annex). Building on SFN 2023, the analysis is extended over time and sector-asset class disaggregation to better inform policy and investment strategies.

6 While 2024 data point are available for some sources of private nature negative and NbS finance, 2023 data is used for the aggregate analysis of finance flows to allow consistent comparison.

Figure 4: Private nature-negative finance flows, 2020–24 (billion US$)



Private nature-negative finance flows by sector in 2023

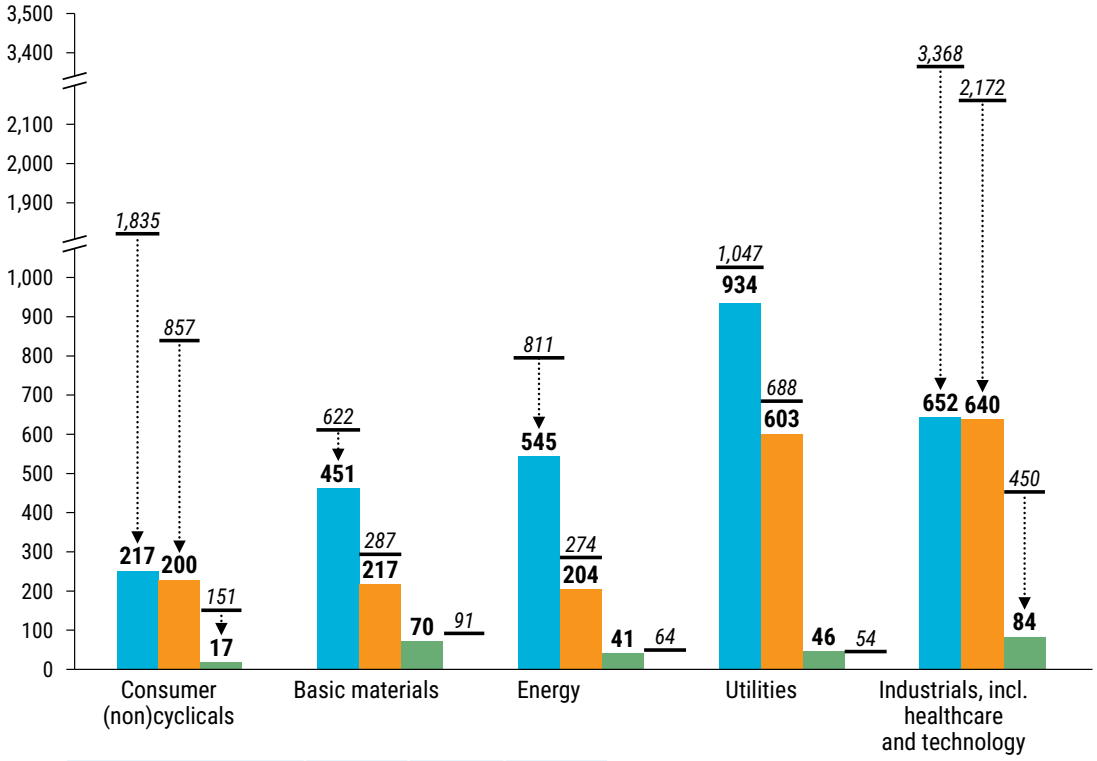


Source: Own illustration based on data from Refinitiv/LSEG, ENCORE (2025).

Indirect impacts across supply chains are not assessed as this analysis considers only direct impacts by sectors. However, indirect impacts are relevant for sectors whose environmental impacts are embedded in upstream production systems. While agriculture and food systems are recognised as major drivers of biodiversity loss, their direct footprint appears relatively small. Agriculture-related investments are dispersed across consumer non-cyclicals (US$434 billion) such as food and beverages, and basic materials (US$738 billion) such as fertilizers and chemicals resulting in underestimation of the role of agriculture and food systems in activities that harm nature (Figure 4). Shifting capital away from high-impact sectors may still exert indirect pressure on ecosystems unless supply chain effects are also addressed.

Disaggregating private nature-negative finance flows by asset class provides insights into the extent to which different types of capital contribute to harming nature (Figure 5). Loans (blue bar) dominate the financing of nature-negative activities in key sectors. In energy and utilities, loan-based finance flows were close to US$1.5 trillion in 2023, flagging the role of corporate lending as a primary channel for funding high-impact operations. Bonds appear more concentrated in industrials at US$638 billion in 2023, reflecting their use in longer-term capital projects associated with nature-negative outcomes. Equity flows are present across all sectors but generally exhibit smaller volumes, with only modest representation in resource-intensive sectors. Exclusion policies by commercial banks are historically focused on equities, leaving a critical gap in the regulation of debt finance that continues to channel billions into nature negative activities (Financial Times 2025).

Figure 5: Private nature-negative finance flows by sector and asset class in 2023 (billion US$)



in billion US$ (2023)	Loans	Bonds	Equity
Total analysed	*7,683*	*4,277*	*809*
Nature negative	**2,798**	**1,864**	**258**
Negative as share of total	35%	44%	32%

Note: Authors' calculations based on data from Refinitiv/LSEG and ENCORE (2025). The horizontal line with a down arrow represents the volume of analysed flows while the solid bars represent nature-negative finance flows.

Sectors with high nature-negative share are utilities (88 per cent), basic material (74 per cent) and energy (69 per cent). From an asset class perspective, corporate bonds have the highest share (44 per cent) of nature-negative flows, followed by corporate loans (36 per cent).

Overall, 39 per cent of private finance flows to key sectors in 2023 was linked to activities with nature-negative impacts, highlighting the scale of misalignment between investment and nature and climate goals. Utilities and basic materials sector are hotspots for nature-negative exposure, with more than three-quarters of total finance flows being nature-negative, with the share evenly spread across asset classes. More than two-thirds of finance flows to the energy sector are nature-negative across all asset classes. While the share of nature-negative finance in the industrial sector is much lower at around 23 per cent, in absolute magnitude the nature-negative flows are larger than the energy and the basic material sector due to the size of the sector.

This report uses the ENCORE: Exploring Natural Capital Opportunities, Risks and Exposure tool to identify nature-negative finance in global private financial transactions based on Refinitiv/ LSEG data. If an economic activity generates "High" or "Very High" pressures on nature, then finance flows to this activity are treated as nature negative following an attribution scheme (see Technical Annex).

ENCORE shows how sub-sectors of the economy rely on and negatively impact nature. It assigns a pressure materiality rating from "Very Low" to "Very High" to pressures on ecosystems generated by sub-sectors. These ratings can be aggregated at the sector level to understand how finance flows to different sectors affect nature, but do not consider management actions to address impacts within activities. Sectoral impact ratings are combined with financial transaction data provided by Refinitiv/LSEG using an attribution scheme. Data provided by Refinitiv/ LSEG covers the universe of private finance flows (including corporate bonds/ loans and equity instruments) between 2020 and 2024.

2.3 Phasing out nature-negative finance

Addressing nature-negative finance is essential for systemic change. This analysis demonstrates that the current system is skewed toward nature-negative investment, particularly in sectors where public subsidies lower risks and inflate returns for nature negative activities, e.g. high emissions energy infrastructure and manufacturing.

A key driver of nature-negative finance flows is the interaction between public subsidies and private finance. Public subsidies lower the cost of capital and risk for polluting industries, encouraging private investment into activities with high environmental externalities. Fossil fuel subsidies encourage continued private lending and equity flows into high-emission energy infrastructure. In the agriculture, fisheries and extractive sectors, public support for inputs (e.g. fertilizers, diesel fuel, pesticides) artificially improves margins and investment attractiveness. This creates path dependencies where capital markets respond to distorted price signals, further entrenching unsustainable business models and delaying investment shifts toward nature-positive alternatives.

Reforming harmful subsidies offers a powerful opportunity to realign public finance with long-term environmental and economic resilience. Key leverage points to support the phasing out of nature-negative finance include reforming fiscal policies to eliminate subsidies that harm nature, replacing them with fiscal incentives that discourage nature-negative practices. Reforms associated with GBF Target 18 to reduce harmful incentives by at least US$500 billion per year, can free up government funding for nature-positive projects and weaken negative externalities.

However, such reforms are politically challenging because they often affect powerful industries or groups that benefit from the status quo and resist change. Moreover, freed up fiscal resources may not go to nature-positive projects. Removing subsidies can increase costs for consumers or producers in the short term, making it unpopular with the public unless well-designed alternatives or compensation mechanisms are provided. The analysis in Chapter 5

outlines actions governments can take to make this transition feasible and socially acceptable.

Governments and financial regulators can deploy a broad set of policy levers to phase out private nature-negative finance and shift capital toward nature-positive outcomes. These include mandatory biodiversity disclosures, integrating nature-related risks into financial supervision and supporting just transition strategies. Central banks and regulators can complement fiscal reforms by adjusting lending, equity and bond issuance frameworks to reflect environmental risks and reward sustainable practices. Tailored actions across asset classes, such as stricter loan conditions for high-risk sectors, stewardship in equity markets and credible green bond standards are critical to redirect finance flows.

It is critical for business and finance to identify, measure, disclose and manage their impacts, dependencies and risks associated with nature. The financial sector can harness knowledge exchange platforms and multi-stakeholder collaboration to develop or improve capacity to identify, measure and manage their exposure to nature-related and social risks. In doing so, financial institutions can gradually restrict capital to activities with high ecological and transition risks, which often carry hidden financial risks.

Companies in industries associated with nature-negative outcomes (e.g. mining, construction) can adopt business models that minimise their indirect impact on nature across supply chains, alongside transition plans to minimise and reverse their direct impact on nature. These actions must prioritise transparency to avoid greenwashing. Corporates can improve their cost competitiveness by shifting capital expenditure toward resource-efficient technologies, regenerative practices and circular business models that lower input costs and enhance resilience. Investors and asset managers can further drive competitiveness by engaging portfolio companies to phase out harmful practices on clear timelines, thereby protecting long-term value and opening access to expanding markets for sustainable goods and services.

3 Finance flows to nature-based solutions

3.1 Global finance flows to nature-based solutions

Public and private finance flows to NbS are estimated at US$220 billion in 2023, an increase of five per cent since 2022 (Figure 6)[1]. Finance flows for NbS have increased steadily, reflecting increased uptake based on their ability to address climate change, biodiversity loss and land degradation. Public expenditure of US$197 billion provides most NbS finance. Of this, domestic public expenditure dominates, channelling US$190 billion. International public finance for NbS delivered via Official Development Finance is estimated at US$6.8 billion (around three per cent of total NbS finance). NbS finance channelled through Debt-for-Nature Swaps amounted to US$0.6 billion in 2023. Private NbS finance is estimated at US$23.4 billion in 2023 (11 per cent of total NbS finance).

1 Due to changes in data and methodology, time trends are best interpreted using the figures presented in this report.

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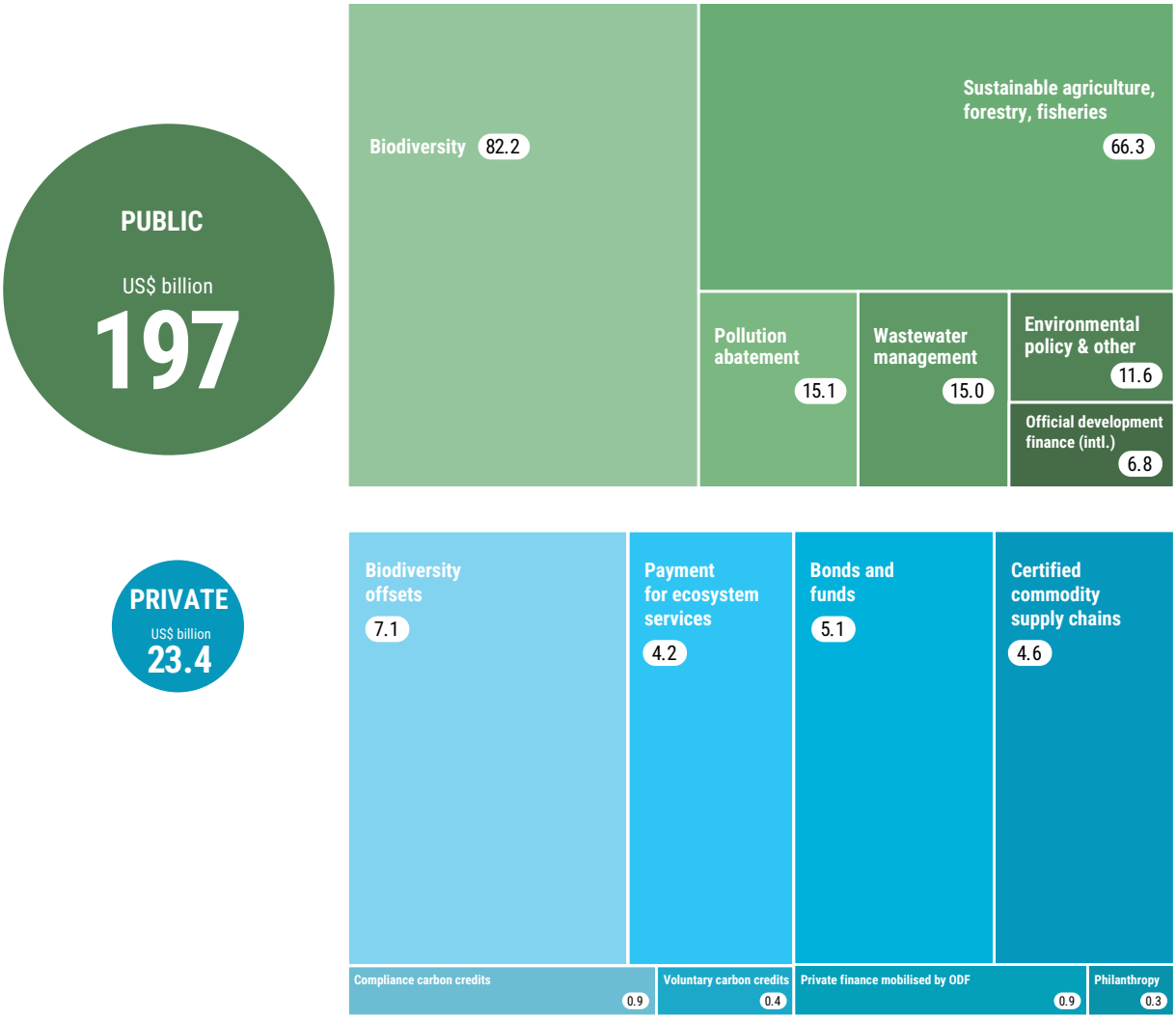
Figure 6: Public and private finance flows to nature-based solutions in 2023 (billion US$)



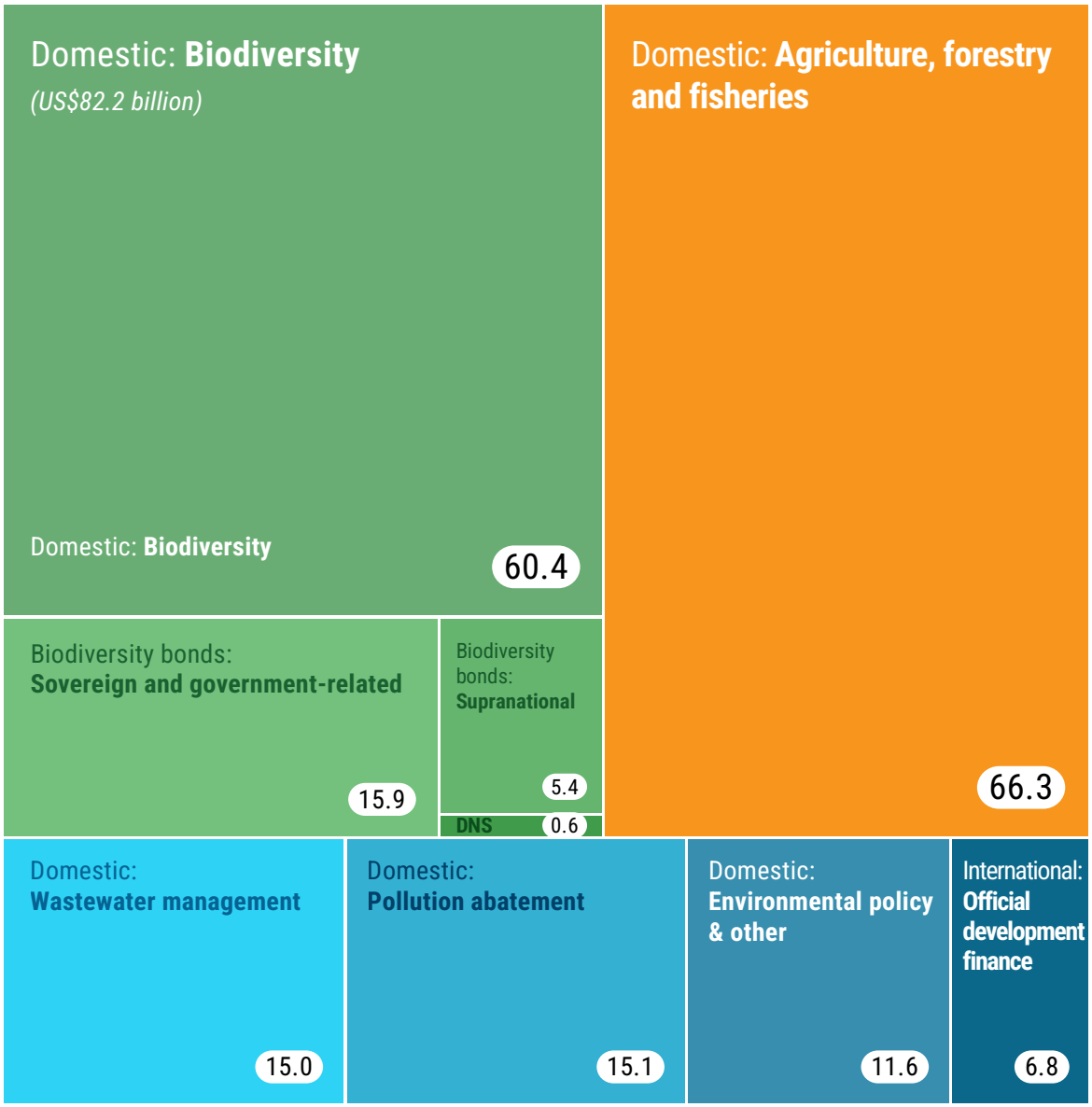
Note: Authors' calculations. Public finance estimates are for 2023 and private finance year varies based on data availability (see section 3.2). Data from IMF Government Finance Statistics (2025), OECD Annual public expenditure by budget function (2025c), OECD Creditor Reporting System (2025b), FAOSTAT Government Expenditure (2025), OECD Mobilised private finance for development (2025a), CPI Global Landscape of Climate Finance (2025), Morningstar (2025), BloombergNEF (2025), Ecosystem Marketplace (2024). Sources for certified commodity supply chains include: 4C (2023), Breukink et al. (2015), FAO (2020; 2022; 2024a; 2024b), FSC (2020; 2021; 2022; 2023), GCP (2021), IDH (2020; 2021a; 2021b), PEFC (2019; 2020; 2021; 2022; 2023a; 2023b), Proterra (2022), Rainforest Alliance (2021; 2022a; 2022b; 2024a; 2024b), RSPO (2024), Statista (2025), World Bank (2025) and WWF (2022).

3.2 Public expenditure on nature-based solutions

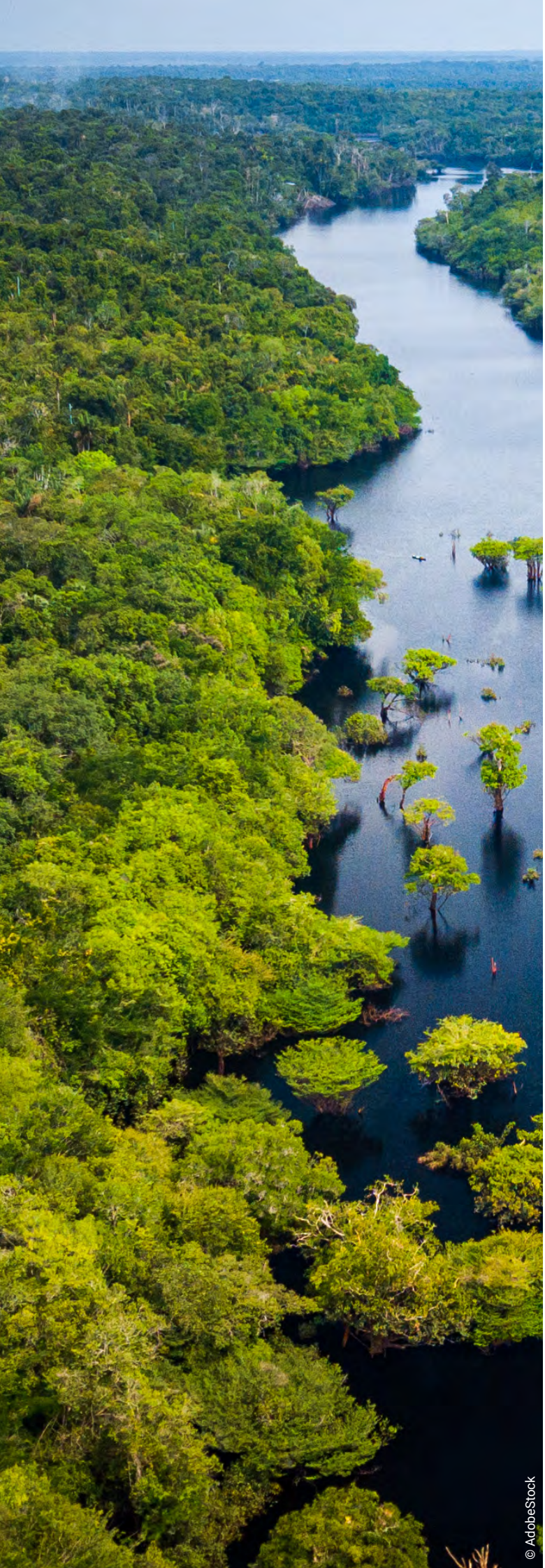
Public finance to NbS is tracked by looking at public domestic expenditure and ODF. In 2023, NbS finance through domestic government expenditure, ODF and debt-for-nature swaps (DNS) reached a historical high of US$197 billion (Figure 7).[2]

2 Public finance flows to NbS are reported under the Classification of the Functions of Government (COFOG) budget lines: biodiversity, agriculture, pollution abatement, wastewater management and environmental policy. Official Development Finance, government and sovereign bonds with biodiversity UoP and DNS are important financing instruments but are captured in COFOG categories.

Figure 7: Public finance flows to NbS in 2023 (billion US$)



Note: Data from IMF Government Finance Statistics (2025), OECD Annual public expenditure by budget function (2025), FAOSTAT Government Expenditure (2025), OECD CRS (2025), and BloombergNEF (2025).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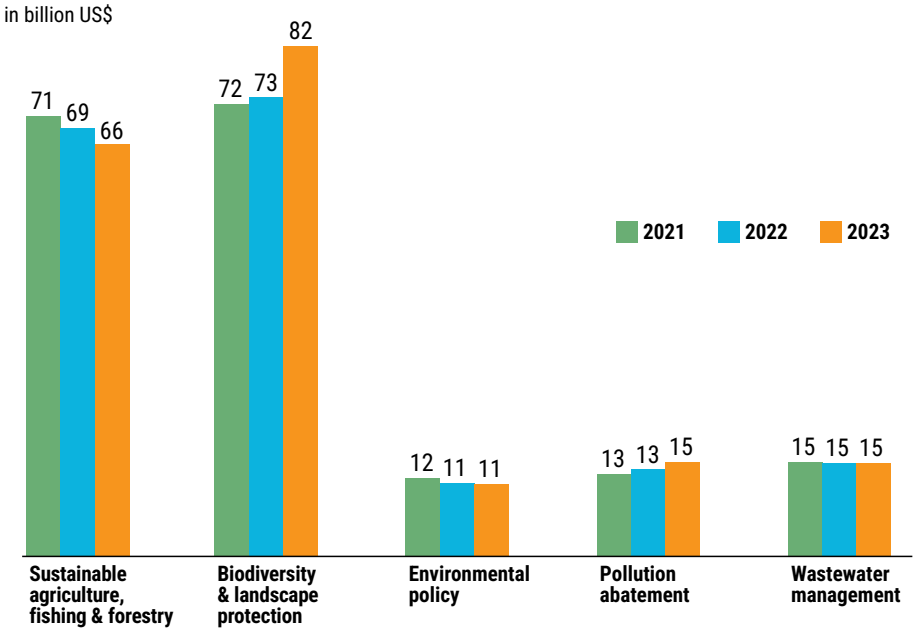
3.2.1 Public domestic expenditure on nature-based solutions

Public domestic expenditure on NbS reached US$190 billion in 2023, increasing by four per cent relative to 2022 (Figure 8).[3] This increase is driven by biodiversity and landscape protection expenditures (up by 11 per cent), while public NbS related expenditure on sustainable agriculture, forestry and fishing fell by roughly 4 per cent (from US$69 billion to US$66 billion). NbS finance through environmental policy and wastewater management also declined from 2021 to 2023 by US$980 million and US$620 million, respectively.

The increase in public domestic NbS expenditure on biodiversity and landscape protection may reflect government commitment to increase expenditure on biodiversity conservation to meet GBF targets. The GBF seeks to increase global expenditure on biodiversity from all sources to at least US$200 billion annually by 2030. Public expenditure on NbS supports climate adaptation, food and water security, and biodiversity conservation through direct investments in e.g. ecosystem restoration, green infrastructure or natural filtration systems. In addition to delivering environmental health and resilience, public funding also provides systemic infrastructure and institutional capacity to mainstream NbS across sectors and can empower IPs and LCs. Achieving these expenditure levels require availability of stable and predictable public revenues. Linking biodiversity spending with revenue measures such as carbon and biodiversity pricing, or earmarking a share of environmental tax receipts, can help governments close the financing gap and make progress towards GBF targets (Box 1).

3 The value of NbS finance in ODF and DNS was subtracted from annual government NbS expenditure to avoid potential double counting. This adjustment is particularly relevant for emerging and developing economies that rely on ODF for domestic government expenditure.

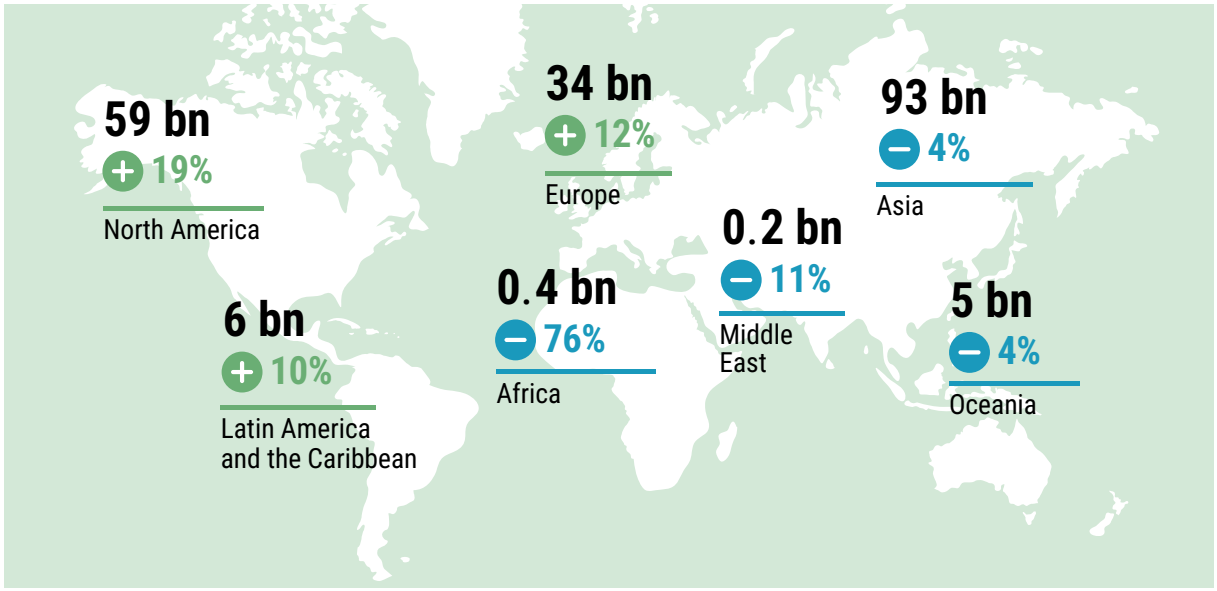
Figure 8: Public domestic expenditure on nature-based solutions by sector, 2021–23 (billion US$)



Note: Authors' calculations. Budget functions are aligned with OECD (COFOG) and include current and capital expenditure. OECD (2025a; 2025b; 2025c), IMF (2025), FAOSTAT (2025), US Government Spending Explorer (2025), Chinese Statistical Yearbook (2025).

In 2023, government expenditure on NbS was highest in Asia (US$93 billion), followed by North America (US$59 billion) and Europe (US$34 billion). North America registered the largest year-on-year increase (+19 per cent), while Europe (+12 per cent) and Latin America (+10 per cent) also showed notable growth. By contrast, Africa (-76 per cent), the Middle East (-11 per cent) and Oceania (-4 per cent) experienced declines in NbS spending compared to 2022 (Figure 9).

Figure 9: Public domestic and international expenditure on nature-based solutions by region in 2023 (billion US$) and percentage change from 2022 to 2023



Note: Authors' calculations. Sign indicates either an upward (+) or downward (-) trend. Data from OECD (2025c), IMF (2025), FAOSTAT (2025), US Government Spending Explorer (2025), Chinese Statistical Yearbook (2025).

An SFN analysis in Colombia (forthcoming) estimates that public expenditure on NbS increased by 23 per cent from US$1.2 billion in 2020 to nearly US$1.5 billion in 2023 driven by domestic expenditure on environmental policy and biodiversity and landscape protection. For details see Box 4 in Chapter 5.

Box 1: Method to estimate domestic public expenditure on NbS

SFN uses IMF and OECD COFOG data, supplemented with national statistics from countries not included in COFOG data, to estimate domestic expenditure on NbS. Scaling factors (SFN 2023) are used to estimate the share of NbS finance in public domestic expenditures. Scaling factors were derived based on the literature and expert review to identify the share of government budget categories that can confidently be associated with NbS. These scaling factors are constant and country-agnostic so do not reflect country and region-specific trends. See Technical Annex for details.

The value of sustainable bonds with biodiversity use of proceeds (UoP) increased from 2019 to 2023 (Figure 10). The value of public green and sustainability linked bonds reached US$15.9 billion in 2023, more than quadrupling since 2019. Biodiversity impact from these bonds materialises when proceeds are allocated to eligible public expenditures, which are covered in the previous section. To avoid double counting, the value of sustainable public bonds is excluded from estimates of public expenditure on NbS as the value of these issuances is captured in COFOG data (Figure 8).


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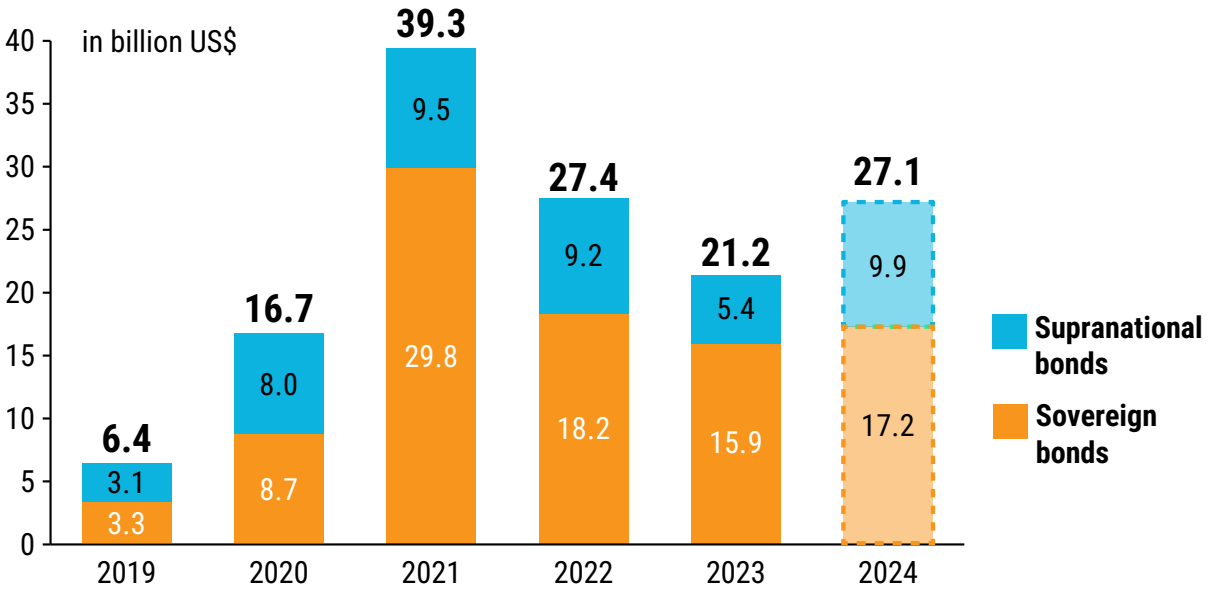
Figure 10: Public green and sustainability-linked bonds with biodiversity use of proceeds by type of issuing entity, 2019–24 (billion US$)



Note: Authors' calculations. Data from BloombergNEF (2025). Estimates represent the total issued divided by the number of UoPs. UoP are generally not divided equally, and biodiversity often receives the smallest share so estimates may likely be overestimated.

3.2.2 Public international NbS finance via Official Development Finance

ODF[4] targeting NbS reached US$6.8 billion in 2023, an increase of 22 per cent since 2022 (US$5.6 billion) and 55 per cent since 2015 (US$4.4 billion).[5]

Despite this growth, ODF targeting NbS is equivalent to only three per cent of domestic government expenditure on NbS in 2023. Moreover, geopolitical dynamics have caused a heavy downward pressure on ODF in general which is highly likely to continue in the future. It is therefore critical to find alternative financing mechanisms to avoid overreliance on uncertain funding.

To identify NbS finance flows in ODF, key characteristics of NbS and NbS finance are defined in Table 2 (see Technical Annex for details).

4 ODF includes Official Development Assistance (ODA) and Other Official Flows (OOF). Eligibility for ODF is determined by OECD DAC and includes low- and middle-income countries listed as ODA recipients based on gross national income (GNI) per capita published by the World Bank (OECD 2023a).

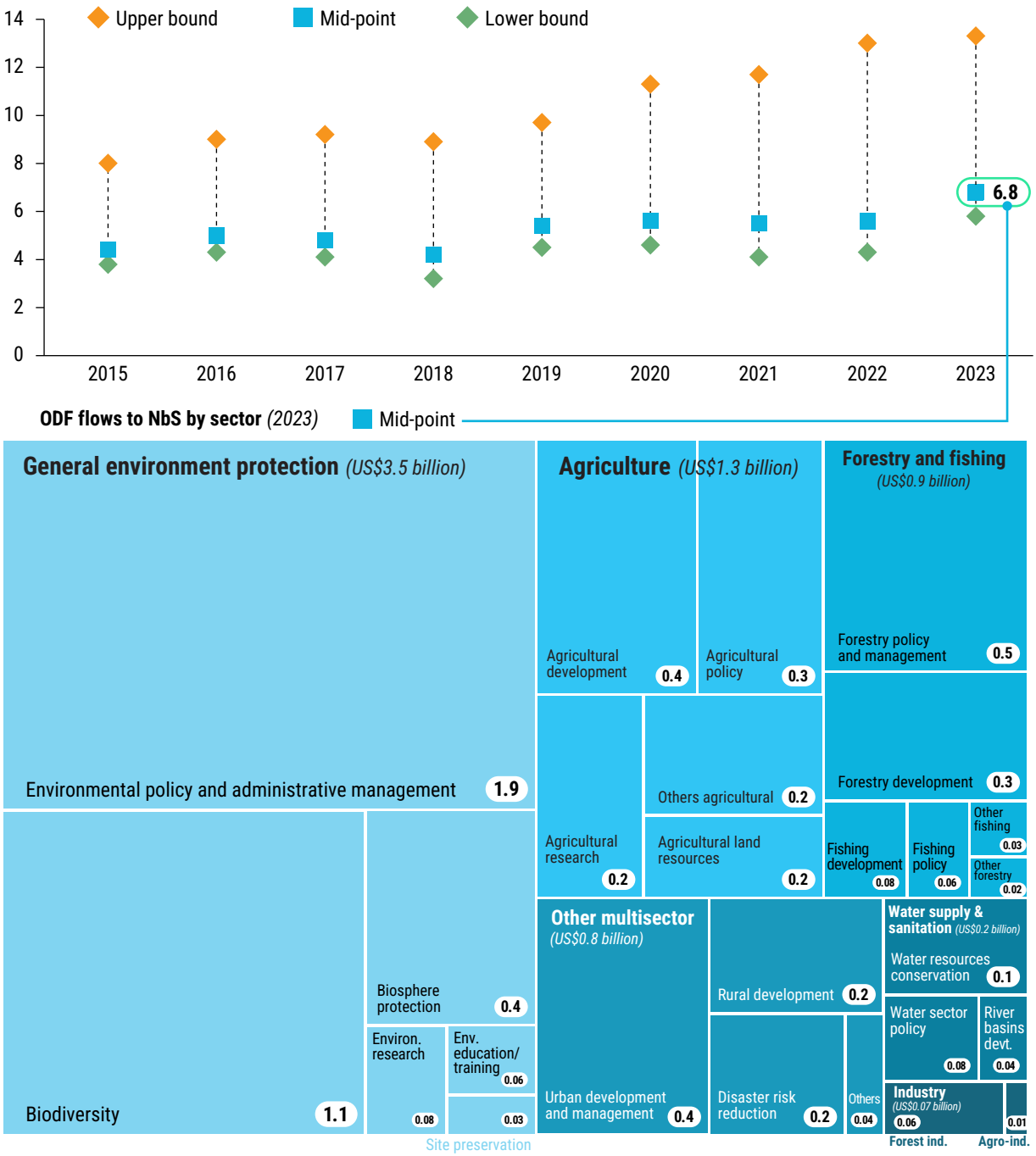
5 Midpoint estimates used.

Table 2: Characteristics to identify NbS finance flows in Official Development Finance

Components for NbS finance	Reference
All NbS finance is covered under biodiversity finance, but not all biodiversity finance is NbS finance, i.e. NbS finance is a sub-set of biodiversity finance.	Academic and grey literature
All NbS finance targets the protection, restoration or sustainable use of ecosystems, species or genetic resources.	OECD DAC Rio biodiversity marker
NbS finance can contribute simultaneously to the objectives of more than one Rio Convention.	Boran et al. (2024); Elsässer (2024); IUCN/ENACT (2024a)
NbS finance can support enabling conditions for mainstreaming biodiversity into development and economic decision making, including governance support, capacity development, regulatory frameworks or research.	OECD definition for biodiversity marker
NbS finance is identified in specific budget categories: environmental protection, pollution abatement, biodiversity and landscape, waste-water management, agriculture, forestry and fishing.	OECD guidance; World Resource Institute [WRI] (2021); Atteridge et al. (2022)
NbS provide net gains to biodiversity and generate benefits for human well-being.	Based on UNEA-5 definition

Figure 11 presents NbS finance flows through ODF over time. NbS finance flows are identified using two sets of criteria, which vary in stringency. Projects that contribute to biodiversity objectives and are tagged with at least a "significant" biodiversity marker are classified as upper-bound NbS finance flows. Projects must meet additional stringent criteria to qualify as lower-bound, i.e. be tagged with a "principal" biodiversity marker (which implies a larger contribution to biodiversity objectives than the "significant" marker) and have keywords related to NbS in their description.

Figure 11: Official Development Finance targeting NbS, 2015-23 and by sector in 2023 (US$ billion)

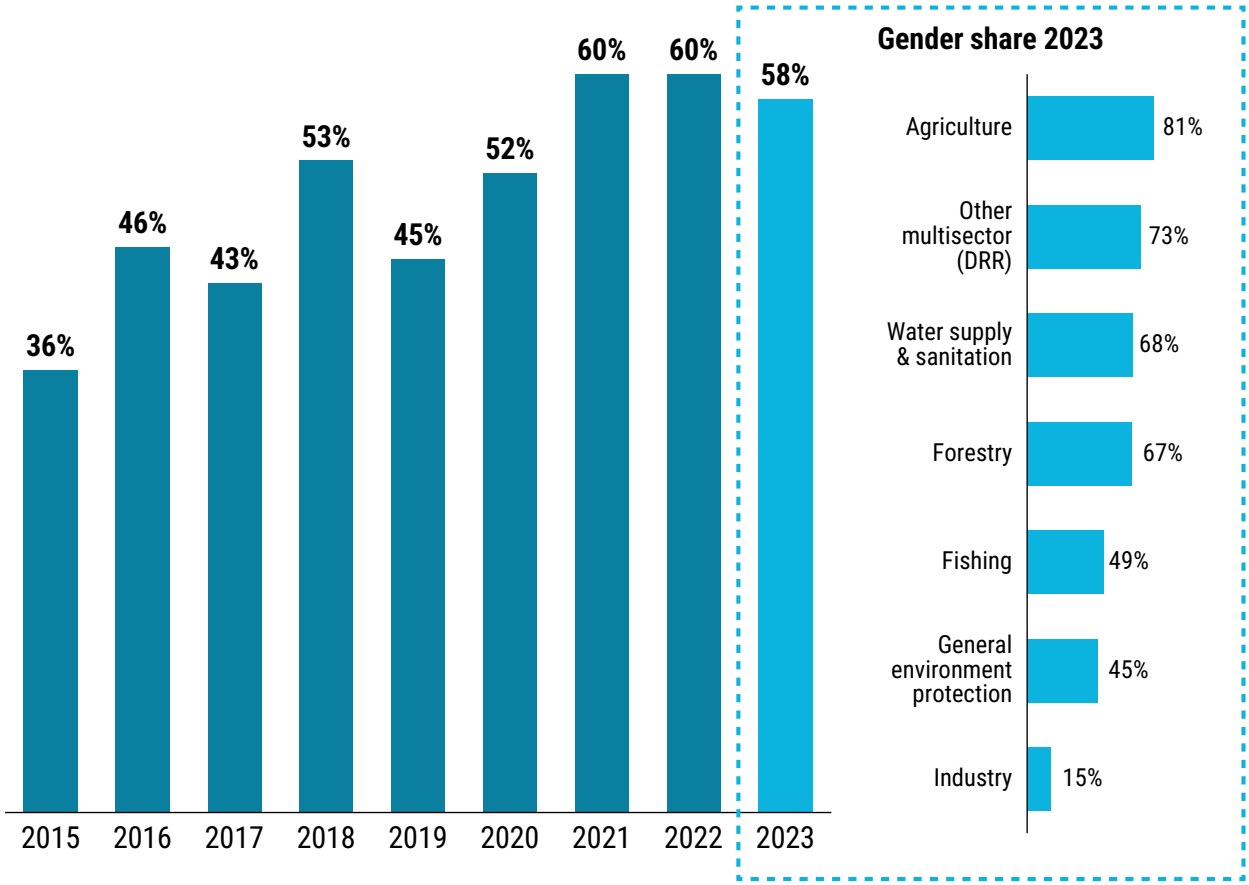


Note: Authors' calculations. Estimates are lower-, mid- and upper-bound to account for uncertainty in identification of NBS. Data from OECD CRS (2025) which covers Official Development Assistance (ODA) and Other Official Flows (OOF) from public bilateral and multilateral sources. For sectoral breakdown, 2023 disbursements are used.

NbS finance in ODF is highly concentrated in environmental policy (US$1.9 billion) and biodiversity-focused interventions (US$1.1 billion) reflecting the central role of governance and biodiversity conservation in public NbS finance (Figure 11). Significant amounts are also allocated to agriculture (US$1.3 billion) and forestry (US$0.8 billion). Most ODF targeting NbS is highly concessional. ODA grants provided 75 per cent of NbS related ODF, with the balance in ODA loans, equity investments and Other Official Flows, e.g. non-export credits.

ODF targeting NbS has a strong gender dimension that has increased over time but is unevenly distributed across sectors. In 2023, 58 per cent of all ODF NbS finance flows are gender marked (Figure 12). ODF NbS finance to the agriculture sector has the highest level of gender integration (81 per cent), followed by disaster risk reduction (DRR) (73 per cent) and water and forestry (68 per cent and 67 per cent respectively). Projects for environmental protection have a lower level of gender integration with 45 per cent tagged with the gender marker. To enhance impact, policies should ensure NbS funding integrates gender from design to implementation, with clear targets and accountability for gender outcomes.

Figure 12: Share of Official Development Finance targeting NbS with a gender marker, 2015-23



Note: Authors' calculations. Estimates are in percentage terms and based on mid-point values. Based on OECD CRS (2025b) which covers ODA and OOF from public bilateral and multilateral sources. Projects are identified with a significant or principal gender marker.

3.2.3 NbS delivering on the Rio Conventions

Roughly 43 per cent of ODF targeting NbS in 2023 supported projects delivering against all three Rio Conventions simultaneously, demonstrating important synergies to tackle climate change, biodiversity loss and land degradation, desertification and drought (DLDD). NbS offer strategic opportunities to strengthen coherence in implementation and financing across Rio Conventions. Synergistic implementation not only amplifies impacts but also reduces costs, e.g. in Central Asia, synergies reduced total cost of implementation by 25 per cent (Mirzabaev *et al.* 2025). However, financial reporting on NbS by countries against the targets of the Rio Conventions can be challenging. Greater clarity on how NbS finance relates to biodiversity finance, climate finance for nature and restoration or DLDD finance is needed.

This analysis looks at each transaction of ODF disbursements that meet the biodiversity-related eligibility criteria for NbS (Table 3). Further attribution to UNFCCC (climate) and UNCCD (DLDD) is made using Rio markers, keywords in project descriptions and SDG proxies. Identification of NbS activities relied on project descriptions and should not be interpreted as official reporting by DAC countries. Details are in the Technical Annex.

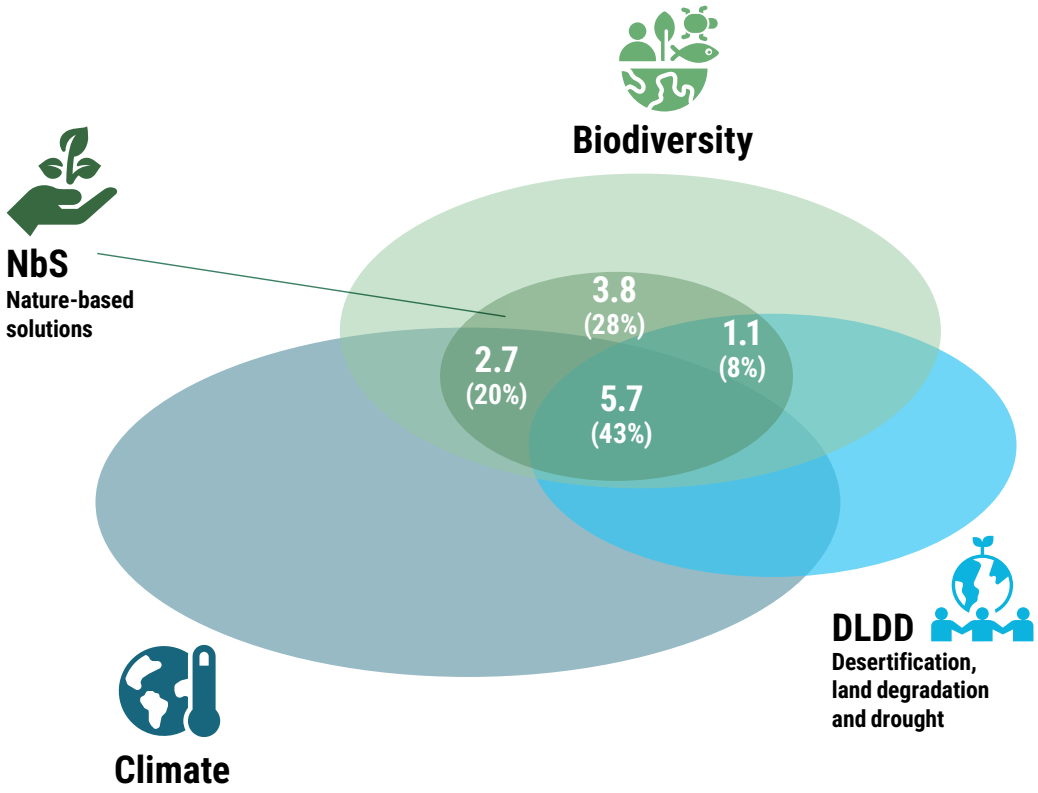
Table 3: Attribution scheme of NbS transactions to Rio Conventions

Biodiversity finance (CBD)	Climate finance (UNFCCC)	DLDD finance (UNCCD)
Biodiversity sector Biosphere protection sector Biodiversity marker (significant or principal) Biodiversity keyword (significant-like or principal-like) SDG 14 (life below water) or SDG 15 (life on land) marker	Climate mitigation marker (significant or principal) OR Climate adaptation marker (significant or principal)	Desertification marker (significant or principal) DLDD keywords SDG 15.3 marker (land degradation neutrality) SDG 15 marker (life-on-land) SDG 2.4 marker (sustainable food production) Biodiversity OR climate adaptation marker in sector*

Note: *General environmental protection (CRS Category), urban development and management, urban land policy and management, rural development, rural land policy and management, disaster risk reduction. SDGs markers and keywords for climate finance are excluded. Referring to SDG markers, OECD (2023) states that "the heterogeneity in reporting quality of this field implies that data extracted from this field may be inconsistent across donors."

Disaggregation of ODF targeting NbS by Rio Convention demonstrates that NbS flows are captured under biodiversity finance (upper bound estimates of US$13.3 billion) with subsets of NbS finance contributing also to climate and DLDD objectives. The overlapping area in Figure 13 represents ODF NbS investments that simultaneously deliver biodiversity, climate and/or DLDD benefits. US$5.7 billion (43 per cent) of ODF targeting NbS in 2023 supported projects delivering against all three Rio Conventions simultaneously. Donor countries differ in the extent to which they support NbS, which likely reflects differing priorities.

Figure 13: Contribution of ODF targeting nature-based solutions to Rio Conventions in 2023 (US$ billion and %)

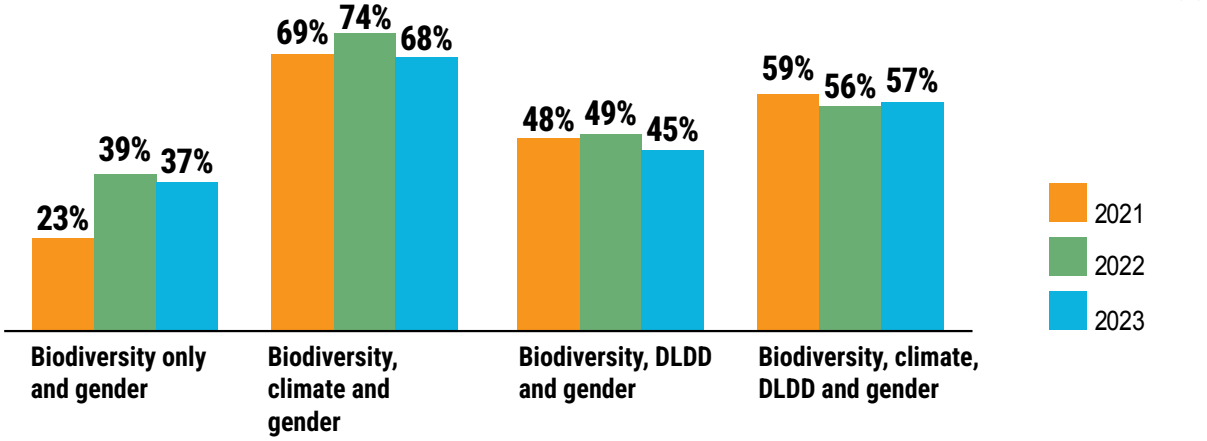


Where additional Rio markers or other indicators for climate or DLDD objectives are present, transactions are also attributed to UNFCCC or UNCCD. Overlapping or joint contributions occur when single investments support multiple Rio Convention targets simultaneously.
Based on upper bound estimate which include 100 per cent of the value of transactions tagged with the biodiversity Rio marker or equivalent.

NbS finance delivery across Rio Conventions and gender integration

NbS projects aligned with multiple Rio Conventions, particularly climate and biodiversity, have high shares of gender integration (68 per cent), while projects focusing solely on biodiversity (37 per cent) lag (Figure 14). This suggests that gender-responsive approaches are more systematically addressed in multi-convention projects, reflecting recognition of gender equality as a cross-cutting driver of more inclusive and effective environmental action. The relatively higher gender shares in NbS projects contributing to multiple Rio Conventions indicate that gender-responsive synergies are beginning to materialise in practice (UN Women 2024).

Figure 14: Share of Official Development Finance targeting NbS that delivers on multiple Rio Conventions and gender, 2021–23 (%)

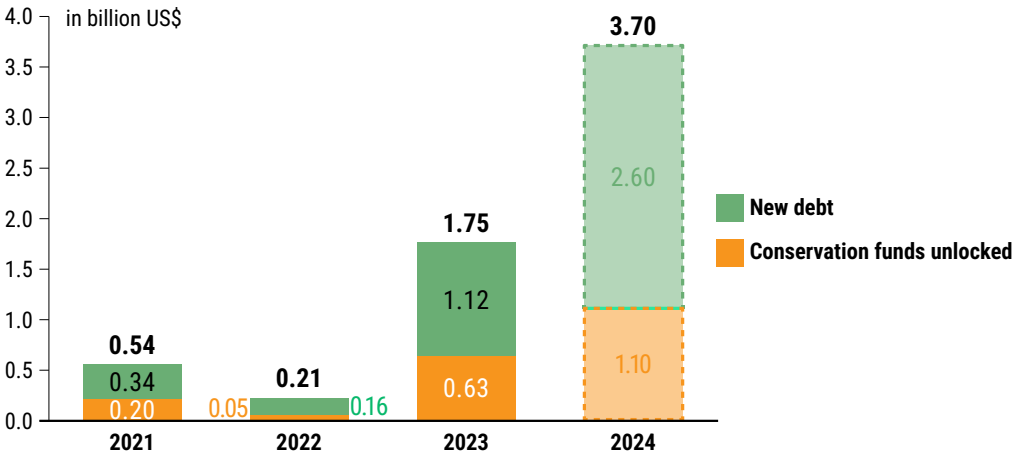


Note: Authors' calculations with data from OECD CRS (2025b).

3.2.4 Public debt-for-nature swaps

NbS finance flows channelled through debt-for-nature (DNS) swaps reached roughly US$0.63 billion in 2023 (Figure 15). DNS are financial transactions in which a share of a country's foreign debt is restructured on better terms in exchange for commitments to invest in conservation, often channelling funds into local projects and engaging IPs and LCs. SFN 2026 introduces DNS in NbS finance estimates to capture the growing contribution of sovereign debt restructuring as a channel for mobilising finance for nature. There have been eight DNS agreements from 2021–24 in Belize, Ecuador, Gabon, El Salvador, the Bahamas, and Barbados.

Figure 15: Total restructured debt by year, including new debt and conservation funds, 2021-24



Source: Authors' calculations. Data from BloombergNEF 2025; Bloomberg Terminal 2025.

DNS aim to address the dual challenges of sovereign debt and biodiversity loss, particularly in emerging economies. Traditional debt restructuring typically aims to stabilise a country's financial situation by renegotiating the terms of debt repayment, without addressing broader socio-environmental issues. In contrast, DNS integrates financial relief with tangible conservation outcomes, creating a win-win scenario for both economic stability and environmental sustainability.

There are two types of DNS. Commercial DNS involve restructuring government debt that is traded on markets, such as fixed income securities (e.g. sovereign bonds). A third-party organization, usually an NGO, government or individual(s), purchases the debt at a discount in the secondary market. The debtor country then invests the acquired funds in local currency in conservation projects. Bilateral (public) DNS are government-to-government agreements on debt that is not traded in financial markets, such as loan products. Tailoring DNS to the needs and priorities of countries is essential to maximise its effectiveness. This requires knowledge of priority areas within a country, as well as the involvement of national governments in implementing and managing DNS (Nedopil *et al.* 2023).

While DNS have potential, their success depends on enabling conditions, such as institutional capacity for monitoring, alignment with biodiversity priorities and resilience to external financial shocks. Their effectiveness is influenced by the degree of country ownership, strong conservation incentives and additionality. Aligning these instruments with national biodiversity plans, nature-related taxonomies and inclusive processes, particularly involving IPs and LCs, enhances impact. More broadly, the successful scaling of nature finance may rely less on individual instruments and more on coherent, systemic approaches that integrate climate and nature objectives through robust governance and accountability mechanisms (IMF 2024).

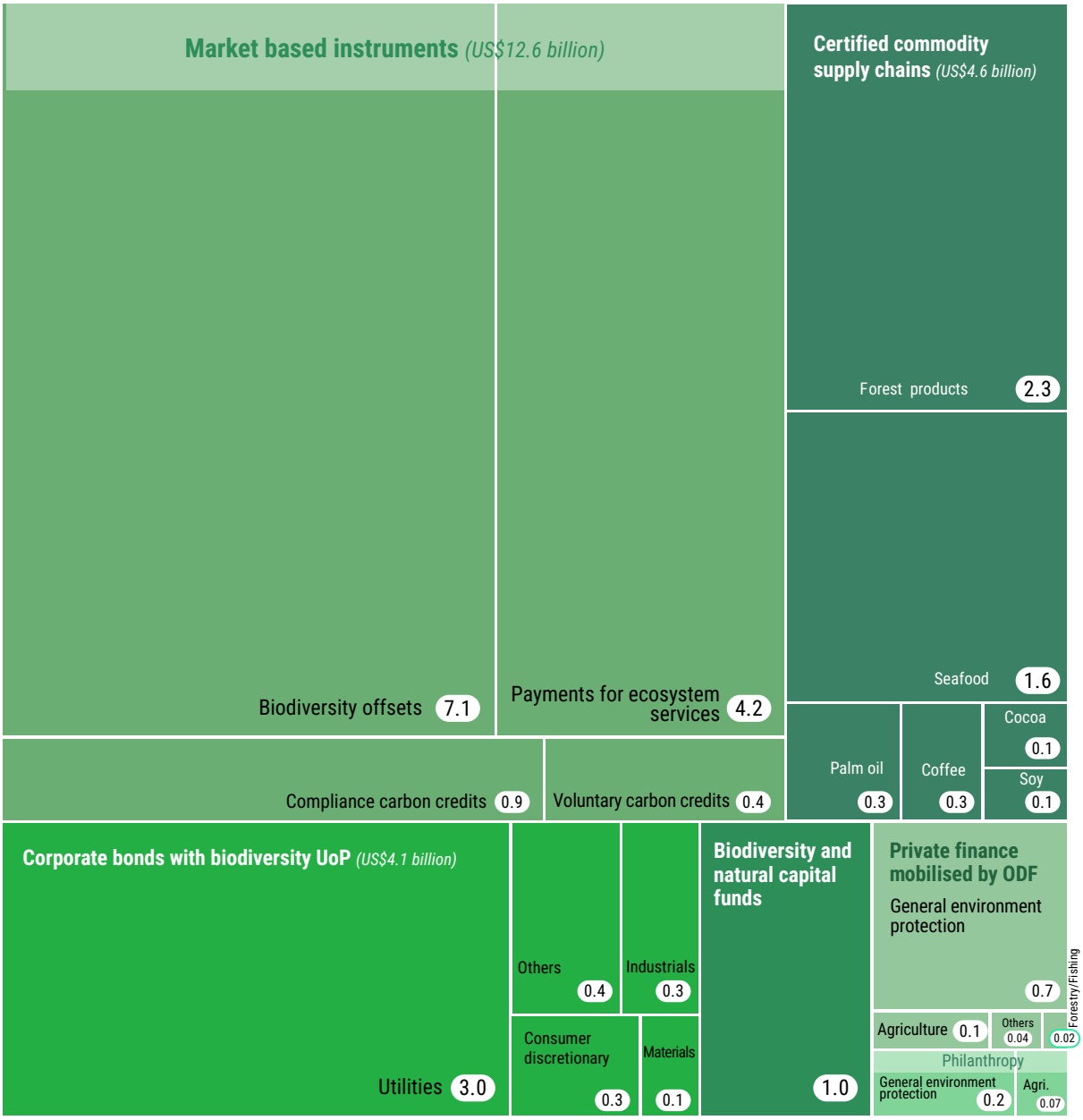
3.3 Private finance flows to nature-based solutions

Private finance flows to NbS reached US$ 23.4 billion in 2023, one-tenth of total finance flows for NbS (Figure 16), up by nearly 8 per cent since 2022. Private NbS finance tracked includes green and sustainability linked bonds with biodiversity UoP, philanthropy, private finance mobilised by ODF, biodiversity offsets and credits, carbon markets, payments for ecosystem services (PES) and certified commodity supply chains.

Biodiversity offsets mobilised roughly US$7.1 billion providing the largest share of private NbS finance. Sustainable corporate bonds with biodiversity UoP and biodiversity funds are increasingly important asset classes to scale finance for NbS. Finance channelled through private corporate bonds with biodiversity UoP was US$4.1 billion in 2023 compared to US$2.7 billion in 2019.[6] Investment in biodiversity funds has grown rapidly at 14 per cent CAGR over the past five years (Global Impact Investing Network [GIIN] 2024).

6 Excluding financial sector issuances of around US$5 billion in 2024 (BloombergNEF 2025; Bloomberg Terminal 2025).

Figure 16: Private finance flows to nature-based solutions in 2023 (billion US$)



Source: Authors' calculations. Data: biodiversity bonds (Bloomberg); private finance mobilised (OECD); philanthropy (OECD); biodiversity offsets (various); PES (various); CCSC (various). Market-based instruments are non-exhaustive and clustered avoiding double counting or identification issues with other instruments.

While private finance for NbS often captures headlines and policy attention, it currently represents only a fraction of private finance's potential contribution to nature-positive outcomes. Most impact will come through impact mitigation finance, transition finance and mainstreaming approaches, i.e. finance that reduces harm across existing portfolios, supports sectoral transformation and integrates nature considerations into routine financial decisions. Yet, as discussed in chapter 1, these critical categories currently lack agreed definitions, standardised metrics and robust reporting systems. Without comprehensive frameworks to capture this broader spectrum of nature-relevant finance, we risk systematically undervaluing and underreporting the private sector's potential contributions to nature protection. This creates a blind spot: institutions may be delivering substantial nature benefits through supply chain improvements, circular economy investments and sectoral transitions that remain invisible in current tracking systems.

3.3.1 Sustainable bonds for biodiversity

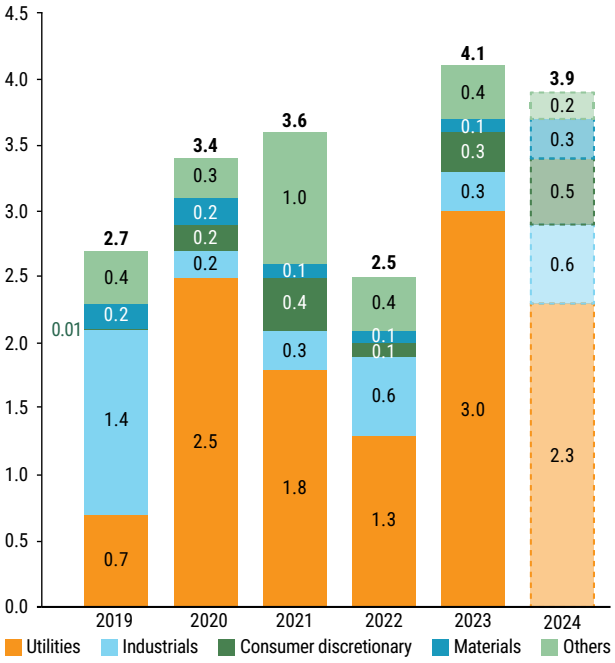
Germany, the United Kingdom, France, Italy, China, Spain, Sweden, Australia, Hong Kong and the European Union issued US$168 billion in sustainable and green bonds with biodiversity UoP in the first eight months of 2024 (BloombergNEF 2024). While government financing is responsible for all of this issuance in six of the largest markets, biodiversity-related bonds issuance in China, South Korea and France is composed almost entirely of private-sector funds. Investors are venturing into frontiers of nature and biodiversity via labelled bonds including biodiversity conservation among their UoPs (Sustainable Fitch 2023a).

Issuance of green bonds targeting NbS to de-risk private finance is a strategy to increase private investment in NbS. Bonds may target NbS that enhance flood protection of cities, municipalities and local industry. Sustainability-linked loans and bonds with a nature component are increasing. The issuance of green and sustainability bonds featuring terrestrial and aquatic biodiversity increased from just 5 per cent in 2020 to 16 per cent in 2023 (Sustainable Fitch 2023b).

Examples of the growing use of bond proceeds for nature-positive outcomes include the Spanish region of Castilla y León which allocated part of its 2023 sustainable bond proceeds to forest fire prevention, reforestation and conservation projects (Junta de Castilla y León 2023). In the United Kingdom, United Utilities issued a GBP 300 million[7] sustainable bond in 2021, channelling funds into peatland and riverbank restoration to enhance water quality and flood resilience (United Utilities 2024).

Finance flows channelled via private corporate bonds with biodiversity UoP from 2019 to 2024 are shown in Figure 17. The utilities sector is responsible for over three quarters of the total at US$3 billion in 2023, with a consistently high share over time. Industrials and consumer discretionary have significant but variable volumes of corporate bonds.

Figure 17: Private corporate sustainable bonds with biodiversity UoP by sectors, 2019–24 (billion US$)



Note: Authors' calculations. Estimates cover corporate bonds, excluding financial sector bonds. Data from BloombergNEF 2025; Bloomberg Terminal 2025.

7 US$400 million by 5 August 2025 exchange rate.

3.3.2 Biodiversity funds

An average of US$1 billion was invested in biodiversity funds annually between 2020 and 2023, concentrated in the industry, basic materials and information technology sectors (Morningstar 2025). Biodiversity and natural capital funds are actively managed financing platforms which channel investment into biodiversity conservation, restoration and protection projects via diverse financial mechanisms.[8] These mechanisms may involve the application of exclusion-based policies on non-financial corporates that engage in environmentally harmful activities and the adoption of biodiversity indicators (e.g. Corporate Biodiversity Footprint, Biodiversity Impact Measurement and Assessment Practices) and frameworks (e.g. the Partnership for Biodiversity Accounting Financials) to guide investment strategies. While data on the amount and distribution of finance flows channelled by biodiversity and natural capital funds is scarce, it is possible to identify key sectors targeted by biodiversity and natural capital funds globally. Granular data at the activity-level is needed to identify finance flows channelled by these funds to NbS specifically.

Biodiversity and natural capital funds held a total of US$1.6 billion in assets under management as of October 20249, which represented an increase of nearly 50 per cent since the beginning of the year (Morgan Stanley Capital International [MSCI] 2024a).

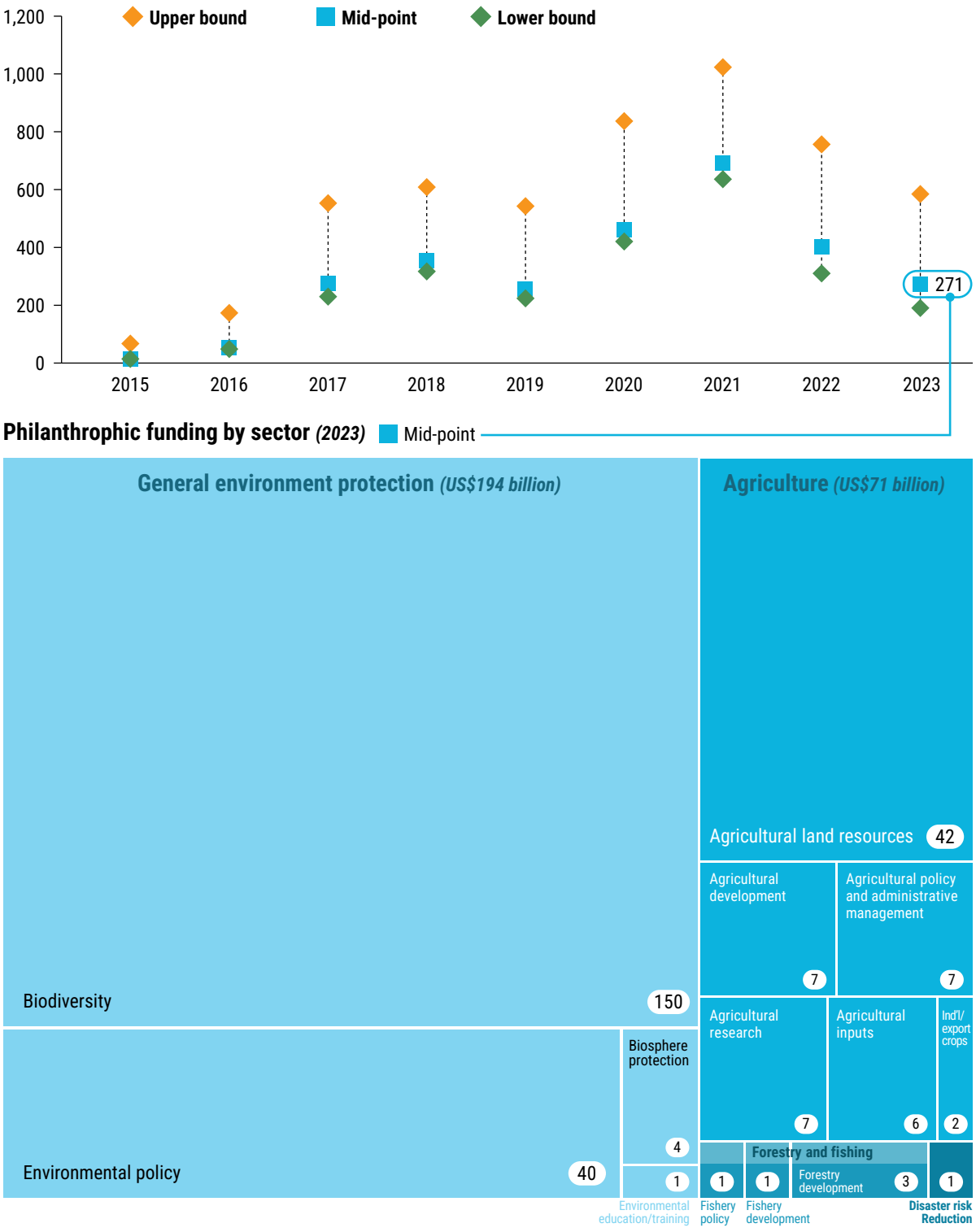
3.3.3 Philanthropic funding

Private philanthropy channelled around US$271 million to NbS in 2023, a decline of 60 per cent since a peak of US$692 million in 2021 (Figure 18). Biodiversity and biosphere protection absorb just over half of philanthropic funding, followed by agricultural land resources (15 per cent) and environmental policy (15 per cent) in 2023.

8 Bioy et al. (2024) identify three types of biodiversity investment strategies used by biodiversity funds: Reduction in biodiversity-related impacts (risk-oriented), the provision of solutions to biodiversity loss (solutions-focused) and a combination of both (mixed).

9 All 24 funds analyzed are domiciled in Europe and only four are located outside the region (MSCI 2024a).

Figure 18: Philanthropic funding to nature-based solutions, 2015-23, and by sector in 2023 (million US$)



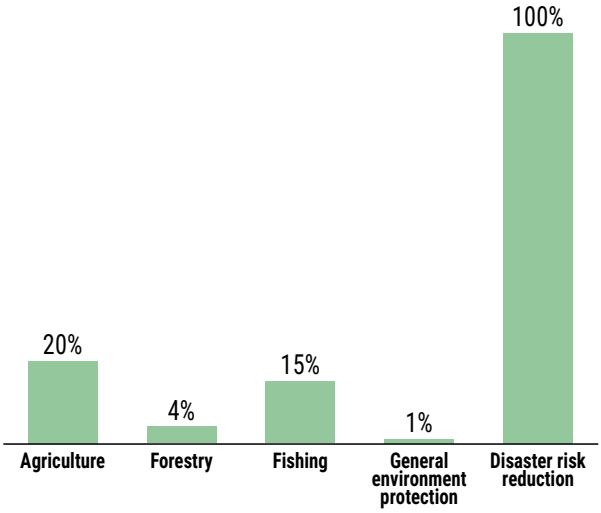
Note: Authors' calculations. Estimates are low-, mid- and upper-bound estimates reflecting uncertainty in project identification. Filtering criteria ensure that double counting in OECD (CRS) datasets is minimised.

While philanthropic funding to NbS has decreased dramatically between 2021 and 2023, recent developments may signal renewed momentum. At COP16 in Colombia, a coalition of philanthropic organizations including Arcadia, the Becht Foundation, Bezos Earth Fund and Bloomberg Philanthropies announced a US$51.7 million pledge to accelerate development of Marine Protected Areas (MPAs) in the high seas. This new commitment signals growing recognition of ocean-based NbS and reflects the important role of philanthropic action to fill critical funding gaps in underfinanced ecosystems (Bloomberg Philanthropies 2024).

Philanthropy can play a catalytic role in financing NbS by providing early-stage, risk-tolerant capital to NbS projects and attracting follow-on investments. It can address governance gaps where public institutions are weak. Philanthropy can empower local communities through training and capacity building, strengthening NbS implementation over time. Philanthropy may also fund scientific research, foster cross-sector collaboration and enable experimentation with innovative approaches, such as green bonds or pay-for-success models which other funding sources may find too risky. By bridging critical financial and institutional gaps, philanthropy can lay essential groundwork for scaling NbS (Seddon *et al.* 2020; van Gerwen 2021; Beer 2022; McKinsey & Company 2023).

Gender integration in philanthropic funding for NbS is limited relative to other types of philanthropic funding. The share of philanthropic funding targeting NbS in 2023 marked for gender ranges from 1 per cent for general environmental protection to 100 per cent for disaster risk reduction. However, the volumes are small as DRR makes up less than one per cent of philanthropic funding. The low gender share of NbS-related philanthropy in some sectors may reflect a narrow focus on ecological or technical outcomes, overlooking social dimensions including gender equality that influence long-term success. To increase impact and alignment with global goals, philanthropic funding for NbS must better integrate gender as a core component of effective and inclusive NbS.

Figure 19: Share of gender marked projects in NbS funding through private philanthropy (%)



Note: Authors' calculations. Based on OECD CRS (2025b) data.

3.3.4 Environmental non-governmental organizations

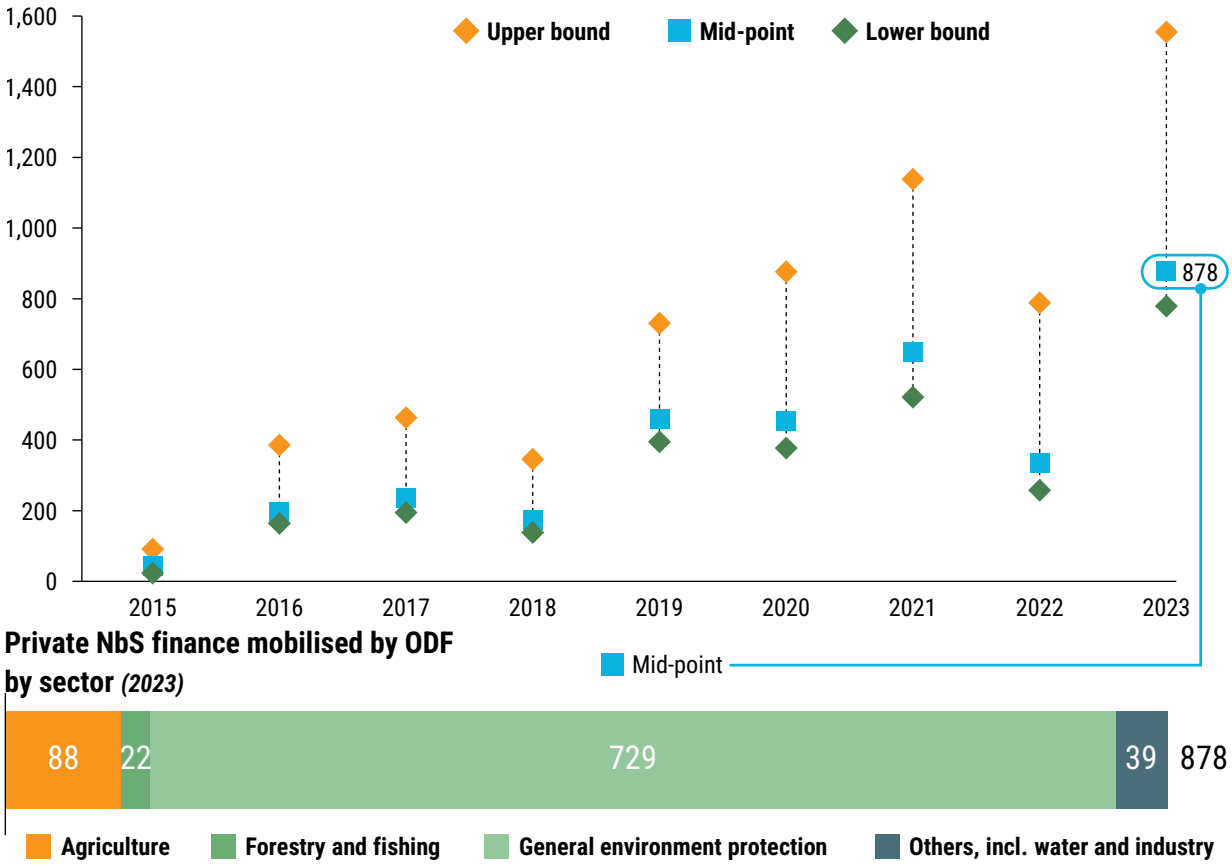
Environmental NGOs (eNGOs) play an important role in providing NbS finance, particularly in emerging and developing economies characterised by greater market volatility and financial risk, which discourages private investors. NbS finance channelled through eNGOs generally incorporates social and environmental safeguards, which helps local communities harness opportunities associated with NbS and to participate in their implementation. A recent study (The Nature Conservancy and Forest Trends 2025) found that global private sector (private companies and foundations) investment in NbS with water-related objectives (e.g. flood risk mitigation, water supply and quality) was approximately US$345 million in 2023.

NbS finance channelled via eNGOs is not included in the quantitative analysis due to limited availability of data and potential double counting. ENGOs are for the most part not direct providers of new funding for NbS, but rather act as intermediaries between governments, multilaterals and foundations and recipients. Since public and philanthropic finance is already reported, and reliable data on eNGO funding sources is lacking, eNGO expenditures are not separately accounted for.

3.3.5 Private finance mobilised by Official Development Finance

Private finance to NbS mobilised by public ODF is estimated at US$878 million in 2023 reflecting a sharp 160 per cent increase since 2022 (Figure 20). Public policy instruments including de-risking mechanisms, e.g. guarantees, co-financing or public-private partnerships, syndicated loans are essential for increasing private investment in NbS. With de-risking mechanisms public actors reduce the perceived financial risks associated with NbS, which may encourage private actors with lower risk tolerance to invest in NbS. Tracking private finance to NbS mobilised by ODF can indicate the effectiveness of public policy instruments in catalysing private NbS finance flows.

Figure 20: Mobilised private finance to NbS by sector, 2015-23 (million US$)



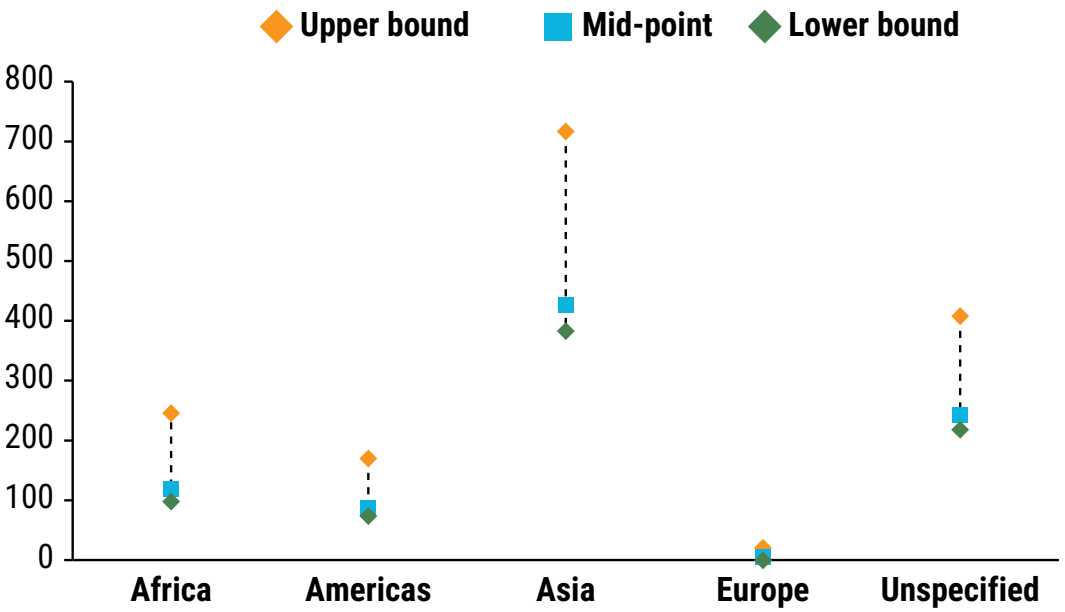
Note: Authors' calculations. Estimates represent lower-, mid- and upper-bound values reflecting uncertainty in project identification. Filtering criteria ensure that double counting in OECD CRS 2025 datasets is minimised.

In 2023, the largest share (80 per cent) of private NbS finance mobilised by ODF went to general environment protection (US$729 million). Smaller shares went to agriculture (US$88 million), water and industry (US$39 million) and forestry and fishing (US$22 million).

Regional analysis identifies Asia as the largest recipient of mobilised private finance to NbS with US$426 million in 2023, followed by cross-regional initiatives (Figure 21). Most of the private finance mobilised for NbS was channelled through simple co-financing and guarantees[10] underlining the important role of these de-risking mechanisms.

10 These values represent average mid-point estimates over 2021–2022.

Figure 21: Private finance for NbS mobilised by ODF per recipient region in 2023 (million US$)



Note: Authors' calculations. Estimates represent lower-, mid- and upper-bound values reflecting uncertainty in project identification. Filtering criteria ensure that double counting in OECD CRS datasets is minimised.

Market-based instruments for nature-based solutions

Private finance remains a modest but growing source of funding for NbS, mobilising an estimated US$13 billion in 2023 through market-based mechanisms including carbon and biodiversity offsets and payments for ecosystem services. These instruments channel investment into conservation, restoration and sustainable land use, yet their overall scale remains small relative to public finance and global needs. Integrity challenges, policy uncertainty and limited demand for verified nature-positive outcomes continue to constrain market confidence. Strengthening transparency, regulatory coherence and links between private and public finance will be critical to scaling credible and sustained investment in NbS.

Investments in biodiversity offsets were estimated at US$7.1 billion, representing a significant channel for finance flows into conservation. The market for biodiversity credits remains nascent, with investments pledged at US$8 million in 2022 (Manuell 2023). Private payments for ecosystem services (PES) channelled roughly US$4.2 billion in 2023. The global market for nature-based carbon offsets, including compliance schemes and the Voluntary Carbon Market (VCM) was valued at US$1.3 billion in 2023.

3.3.6 Carbon offsets

The value of nature-based carbon offsets traded in the VCM declined by 57 percent from US$828 million in 2022 to US$ 355 million in 2023 (Ecosystem Marketplace 2024; Ecosystem Marketplace 2025). Transactions from projects in agriculture, forestry and other land use (AFOLU) fell in volume and value, with their share in total VCM transactions dropping from nearly half in 2022 to just over a third in 2023. Average prices declined sharply, reflecting a cautious buyer environment linked to scrutiny of REDD+ methodologies, particularly baseline calculations and credit issuance (West *et al.* 2024). Media coverage questioning the additionality and integrity of carbon credits in the VCM has reduced demand and pushed some buyers towards engineered project types, where carbon savings are perceived as easier to measure.

Even so, nature-based carbon offsets continued to command a notable price premium in 2024 (World Bank 2025), suggesting that investors still see added value in their biodiversity and social co-benefits. Reforms introduced in late 2023, including updated REDD+ methodologies, appear to be restoring confidence.

In compliance markets, US$942 million in private finance was mobilised in 2023 through national and subnational programmes. This estimate is based on the value of credits cancelled under the New Zealand Emission Trading Scheme (US$679 million), California Cap-and-Trade Program (US$195 million), Colombia Carbon Tax (US$57 million) and Australian Carbon Credit Unit Scheme (US$28 million)[11] – compliance schemes that allow NbS-related carbon credits[12]. Many other compliance schemes, e.g. the European Union Emissions Trading System (EU ETS), only allow direct emission reductions from regulated sectors.

Colombia's carbon pricing policy combines a carbon tax with an offsetting mechanism, the non-causation mechanism, which allows liable entities to avoid triggering the full carbon tax by compensating for up to 50 per cent of greenhouse gas emissions associated with the sale, import or consumption of taxed fossil fuels. Compensation is achieved through acquisition of emission reduction certificates or removals that meet eligibility criteria and are registered in Colombia's national registry (Allcot Trading 2023; Gómez 2024). Despite a relatively low average carbon price of US$5/tCO$_2$e (World Bank 2025), the scale of finance is substantial with roughly 11 million NbS-related offsets used against the carbon tax, generating US$57 million in 2023.

3.3.7 Biodiversity offsets

NbS finance channelled via investment in biodiversity offsets[13] **increased from US$6.8 billion in 2022 to US$7.1 billion in 2023.** Over 100 countries had some form of biodiversity offset programme policy in place in 2019, with 37 countries legally requiring biodiversity compensation or permitting certain developments (Bull *et al*. 2018).

The United States accounted for 87 per cent of the total with US$6.2 billion invested in 2023, mainly through offset and compensation requirements for wetlands and streams under the Clean Water Act and for endangered species under the Endangered Species Act. India represented the second largest market at US$0.86 billion, primarily through the National Compensatory Afforestation Program.

Biodiversity offsetting in the EU is largely compliance-driven under several regulations, including the EU Habitats Directive. Annual transactions reached EUR 350–450 million per annum, with 65 programmes and 180 projects across at least 12 EU countries (Benett *et al.* 2017a). Other regions have provincial programmes (e.g. Australia), lender-funded projects (e.g. Latin America) or Biodiversity Net Gain policies (e.g. UK).

Despite the scale of investment, biodiversity offsets face challenges in design and implementation, with limited evidence of biodiversity gains from averted loss offsets and, in some cases, adverse outcomes. For instance, in Indonesia there is mandatory compensation for development activities such as mining, agriculture, infrastructures in forest concession areas (Global Inventory on Biodiversity Offset Policies [GIBOP] 2019). Forest losses need to be offset, involving substantial costs to find suitable offset areas (Budiharta *et al.* 2018). To implement a strict mandatory offsetting scheme, implementation must be effective. In contexts where government enforcement is weak, voluntary schemes may prove more effective (Droste *et al.* 2022). Further details are provided in the Technical Annex.

This report recognises that biodiversity offsets are compensation mechanisms that may not lead to net positive outcomes for nature. There is a growing scepticism towards some components of the market for nature. Voluntary offsets are increasingly excluded from comprehensive "nature finance" definitions due to concerns about integrity and additionality, with such instruments now viewed primarily as mitigation tools rather than genuinely positive investments. However, this analysis includes finance mobilised through mandatory biodiversity offset schemes with the rationale that, in the absence of these schemes, most damage to nature by developers would not be compensated. Therefore, the investment in offsets represents a net gain over this business-as-usual scenario.

11 All price data is sourced from the World Bank's Carbon Pricing Dashboard, except for Australia's prices. 2023 and 2024 prices are from Clean Energy Regulator (CER) quarterly report series, while 2022 price is estimated from CER market price charts. Details available in technical annex.

12 Other smaller or emerging programmes also permit such credits but are not included in this estimate due to limited available data.

13 Biodiversity offsets are conservation measures required by law to compensate for the adverse and unavoidable impacts of development on species and ecosystems that remain even after other mitigation efforts have been implemented.

3.3.8 Payments for ecosystem services

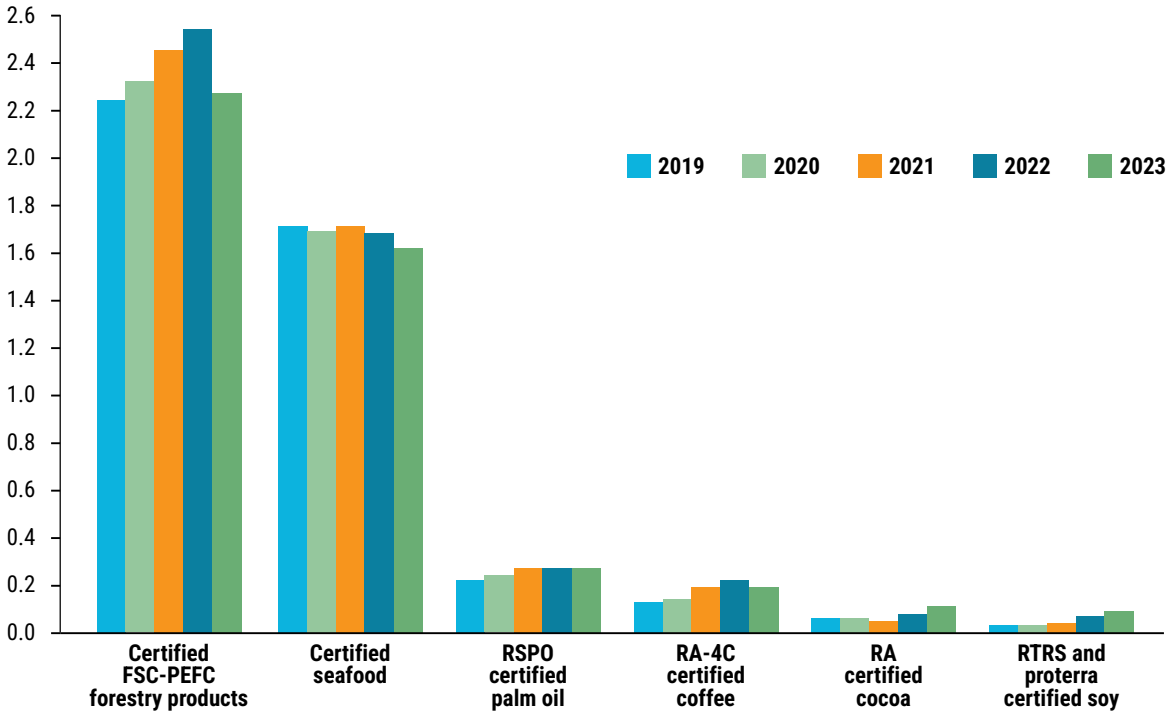
Private NbS finance flows through PES reached approximately US$4.2 billion in 2023. PES are systems for the provision of environmental services through conditional payments to voluntary providers (Taconi 2012). Third parties acting on behalf of users compensate landholders for activities that maintain or enhance ecosystem services delivery. The buyer is a public or private entity (such as a conservation group) that may not directly use the ecosystem service. While public-sector and donor-backed programmes still dominate, private sector engagement in PES is increasing (Wunder *et al.* 2018).

There were 51 PES schemes documented as active in 2024, many government- or donor-led. There has recently been an increase in corporate-led or co-financed schemes, including watershed protection initiatives by beverage companies and biodiversity-linked regenerative agriculture programmes. Common sectors engaging in PES include forestry, agriculture (e.g. related to avoided land degradation) and freshwater supply. To estimate private finance flows to PES, this analysis multiplies the PES estimate (US$10.1 billion) reported in OECD (2021) with the private market share reported by Salzman *et al.* (2018), downscaling the result by 22 per cent and 44 per cent to derive upper and lower bounds. Further details are provided in the Technical Annex.

3.3.9 Certified commodity supply chains

Private finance flows to NbS via certified commodity supply chains are estimated at US$4.6 billion in 2023. Estimates are calculated based on the additional costs incurred to change production practices to obtain certification under recognised sustainability standards. Certified forest products (US$2.3 billion) dominate, accounting for half of finance channelled to certified commodity production (Figure 22). Certified seafood accounted for more than a third.

Figure 22: Private NbS finance flows through certified commodity supply chains, 2019–23 (billion US$)



Note: Authors' calculations. FSC=Forest Stewardship Council; RSPO= Roundtable on Sustainable Palm Oil; RA-4C=Rainforest Alliance - Common Code for the Coffee Community; RTRS=Roundtable on Responsible Soy. Based on 4C (2023), GCP (2021), Breukink et al. (2015), FAO (2020; 2022; 2024a; 2024b), FSC (2020; 2021; 2022; 2023), IDH (2020; 2021a; 2021b), PEFC (2019; 2020; 2021; 2022; 2023a; 2023b), Proterra (2022), Rainforest Alliance (2021; 2022a; 2022b; 2024a; 2024b), RSPO (2023), Statista (2025), World Bank (2025) and WWF (2022).

Investment in the sustainable production and certification of coffee, palm oil, soy and cocoa markets remains a huge opportunity to transform the production of these commodities which play a major role in driving deforestation, ecosystem conversion and degradation globally. Investment in the certification of these commodities amounted to just US$660 million in 2023 (Figure 22), less than 15 per cent of the total certified commodity market. Roundtable on Sustainable Palm Oil (RSPO) certification garnered US$300 million in private finance, accounting for roughly 12 per cent of global palm oil crop area and 20 per cent of supply. Rainforest Alliance and 4C coffee certification, which covers nearly a third of global green coffee production, attracted only US$190 million in investment. See the Technical Annex for details.

Although investment in certified commodity production has increased, it remains dramatically insufficient to address the drivers of nature loss from unsustainable agri-food systems. Limited access to capital, particularly for smallholders, and high transaction costs are key barriers (Hidayati *et al.* 2021; Raman *et al.* 2025). Moreover, market demand for certified goods often lags supply (Jones *et al.* 2024). In 2023, 39 per cent of Rainforest Alliance-certified coffee was sold as conventional coffee due to insufficient demand (IISD 2022; Rainforest Alliance 2024b). Similarly, 43 per cent of Rainforest Alliance-certified cocoa was sold as conventional cocoa (Rainforest Alliance 2024a). Strengthening partnerships between private finance, governments, and NGOs could help bridge this gap, fostering innovation and improving traceability for global supply chains. As stakeholders prioritise alignment between environmental, social and economic goals, a concerted effort to enhance investment in underfunded sectors, such as certified coffee and soy, will be critical in achieving long-term sustainability targets.

3.4 Concluding remarks

Public and private finance for NbS reached US$220 billion in 2023, a five per cent increase from 2022. Public finance (US$197 billion) continues to provide the main source of NbS investment, driven largely by domestic expenditure (US$190 billion) and complemented by ODF (US$6.8 billion) and DNS (US$0.6 billion). Private finance (US$23 billion) remains comparatively limited, mobilised primarily through market-based instruments (~US$13 billion) and certified commodity supply chains.

While finance flows for NbS have continued to grow, they remain far below the levels required to meet global biodiversity, climate and land restoration goals. Persistent challenges—including integrity concerns in voluntary markets, uneven access to finance, and constrained fiscal space—underscore the need for stronger policy alignment, improved transparency and monitoring, and targeted use of public finance to de-risk and leverage private investment. Accelerating progress towards the Global Biodiversity Framework and the Paris Agreement targets will require systemic integration of NbS into national budgets, development planning and private investment strategies.

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4 Investment needs for nature-based solutions

Annual finance flows to NbS of US$220 billion need to increase more than two and a half times from current levels to US$571 billion by 2030 and to more than triple to US$771 billion by 2050 to reach Rio targets.[1]

This chapter analyses investment needed in NbS to meet Rio Convention targets based on SFN 2023 modelling. The SFN Rio-aligned scenario quantifies investment needed to reach 30by30, limit climate change to 1.5°C and reach land degradation neutrality by 2030. Total annual investment needs are based on current finance flows (Chapter 3) and additional investment needs modelled using the Model of Agricultural Production and its Impact on the Environment (MAgPIE), complemented with off-model sources.

In addition, investment in enabling conditions is essential to ensure investment in NbS implementation is effective. Finance can act as an enabler of the transition to nature-positive outcomes when public and private actors, domestic and international, help to build the institutional, policy and market frameworks that allow capital to flow at scale (IPCC 2022). Investing in enabling conditions includes improving governance practices around international commitments, uncovering hidden risks by better understanding risk-return profiles and enhancing the capacity of systems and actors, ensuring that financial resources are mobilised and effectively translated into durable, nature-positive outcomes.

4.1 Investment needs and finance gap

Figure 23 displays investment opportunities in NbS grouped under protection, restoration and sustainable land management from 2030 to 2050.[2] It is assumed that current finance flows are committed to current projects so the modelling focuses on additional investments needed.

Additional investment needed in 2030 is highest for restoration at US$181 billion, followed by sustainable land management (US$101 billion) and protection (US$68 billion). Additional investment needed increases from US$350 billion in 2030 to US$ 550 billion in 2050, driven by the required scale-up of agroforestry systems (+144 per cent) and restoration, including reforestation (+28 per cent). While investment needs for protection appear low, SFN 2023 and the State of Finance for

1 Investment needs refer to annual financial resources required including current finance flows as well as additional finance required for new projects to meet Rio targets.

2 NbS categories and model assumptions are described in the Technical Annex.

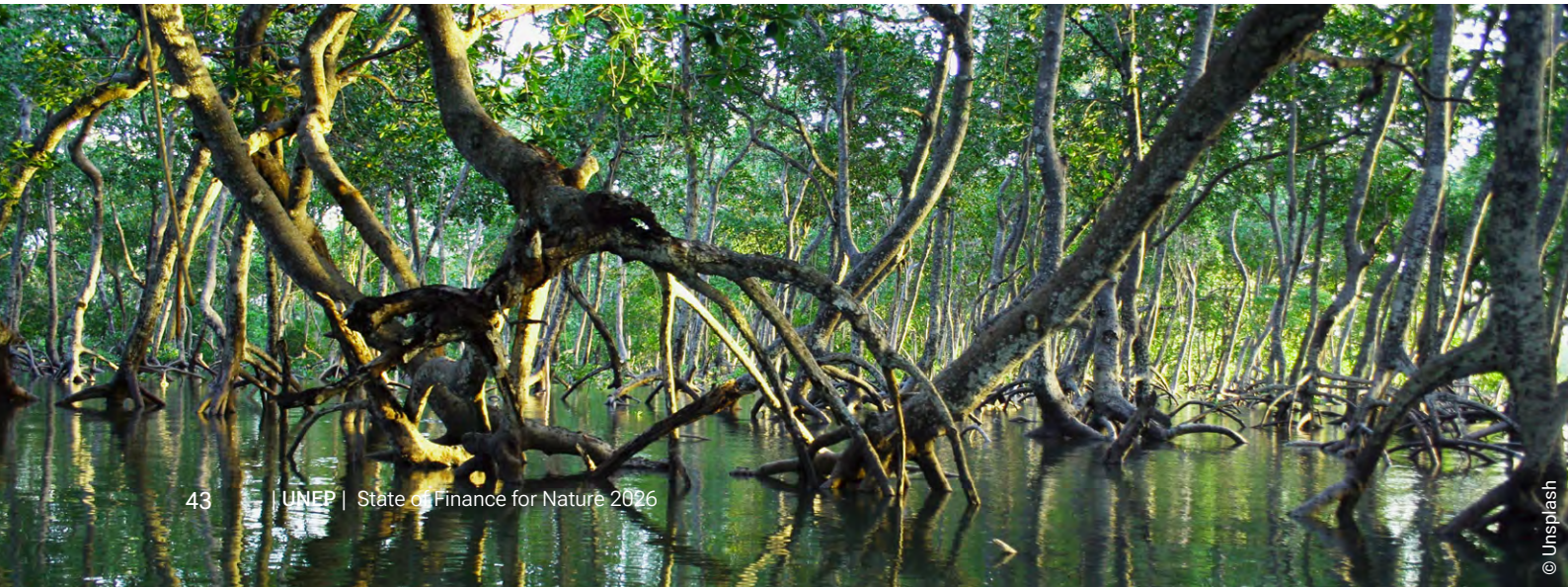
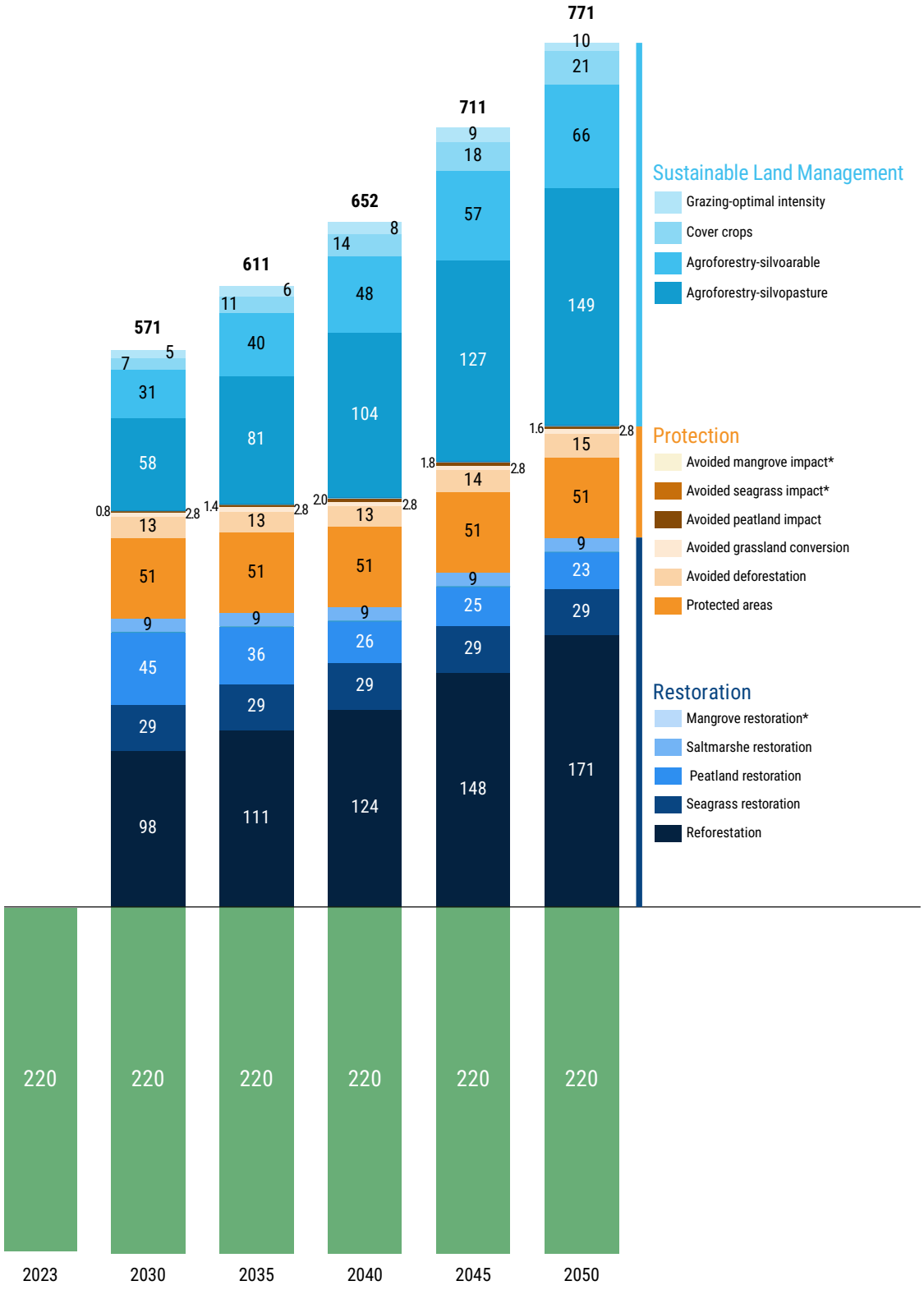


Figure 23: Annual investment needs in NbS to reach Rio targets, 2030-2050 (billion US$)



Note: Authors' calculations. *Values not visible in the figure due to low value.

Forests (UNEP 2025) indicate that this is due to its cost-effectiveness and the low per hectare cost of protection relative to restoration and sustainable land management-related NbS. Protection-related NbS represent roughly 80 per cent of additional land area needed for NbS by 2030 while absorbing only 20 per cent of additional NbS finance (UNEP 2023). Where possible, protection should be prioritised.

In the modelling, as climate action intensifies, pressure on land systems increases. Meeting climate, biodiversity and land degradation targets requires allocating more land to forests and regrowth of natural vegetation, which reduces the availability of land for agricultural production. This shift drives up the level of investment needed, particularly in areas of more efficient agricultural production. Climate pledges of countries assume that almost 1.2 billion hectares of land can be prioritised for greenhouse gas removal (Dooley *et al.* 2022), an area larger than Canada and around 11 per cent of the world's habitable land.

Methodological and data challenges constrain accurate estimation of global and regional investment needs. A key issue is the lack of standardised definitions and taxonomies for what constitutes an NbS intervention. Different institutions and studies use different elements from ecosystem restoration and green infrastructure to biochar and fire management leading to inconsistent scopes (Seddon *et al.* 2021; UNEP 2023). Furthermore, data gaps, particularly in low-income regions, limit the precision of cost modelling and investment tracking. Many countries lack up-to-date land use and ecosystem data, which hinders robust estimation, particularly for restoration and conservation efforts (Davison *et al.* 2021; Nedd *et al.* 2021).

The quantitative estimates presented here cover only a subset of NbS, selected based on their mitigation potential and data availability and quality. Further details are provided in the Technical Annex.

4.2 Investing in enabling conditions

While direct investment in NbS is critical to scale implementation sufficiently to reach Rio targets, it is equally important to invest in an enabling environment that incentivises and supports mainstreaming finance in nature at scale. This indirect investment in NbS includes expenditures related to building enabling policy frameworks, strengthening local institutions, enhancing financial market capacity and supporting knowledge systems and data platforms, along with other leverage points outlined in Chapter 5. Investment in enabling conditions, which are often overlooked in headline figures, are essential for implementation and scaling. Robust regulatory frameworks are essential to address risk and mobilise investments to scale local initiatives (Lebelt *et al.* 2023). Policy frameworks and oversight are also important to avoid unforeseen negative externalities and harm to nature and communities, which may arise from local initiatives that do not consider their systemic impact (IUCN 2020).

Investing in NbS is not just an environmental imperative, it is a high-return, long-term strategy for economic resilience and intergenerational well-being. Due to the transformative potential of NbS and their multiple benefits, investing in NbS supports the economic and social well-being of current and future generations. There is ample evidence that NbS are cost-effective solutions to many global challenges. One dollar spent on ecosystem restoration provides economic benefits 7 to 30-times greater (Verdone *et al.* 2017). A review of NbS for disaster risk reduction found that NbS projects are more effective in attenuating hazards than engineering-based solutions (Vicarelli *et al.* 2024). With the growth of nature markets, evidence suggests that businesses can unlock around US$10 trillion in opportunities and create more than 395 million jobs by 2030 by prioritising nature (Trankmann 2025).

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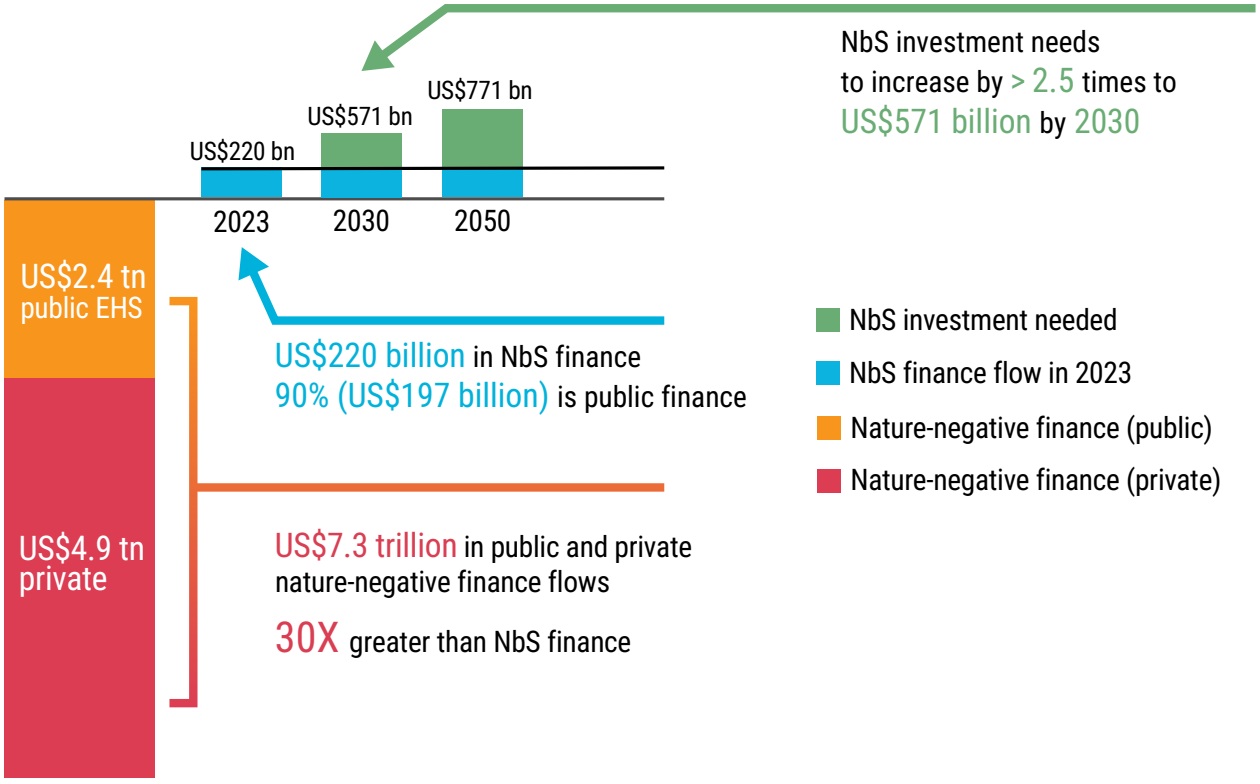
5 Transitioning finance flows for nature-positive outcomes

This report has shown how business-as-usual locks us deeper into further degradation of ecosystems. In 2023, finance directly harmful to nature reached US$7.3 trillion, while investments in nature-based solutions (NbS) amounted to only US$220 billion – a ratio of more than 30:1 (Figure 24). To meet global commitments under the Rio Conventions, NbS investment must increase by more than two and a half times to US$571 billion by 2030, while harmful flows must be phased out and repurposed. Governments need to tackle environmentally harmful subsidies while increasing investment in NbS through domestic and international public expenditure. It is also time for the private sector to step up and scale investment in nature, seizing opportunities to nature and climate proof economic activities and financial portfolios.

Figure 24: Nature-negative finance and NbS finance flows in 2023 and future NbS investment needs



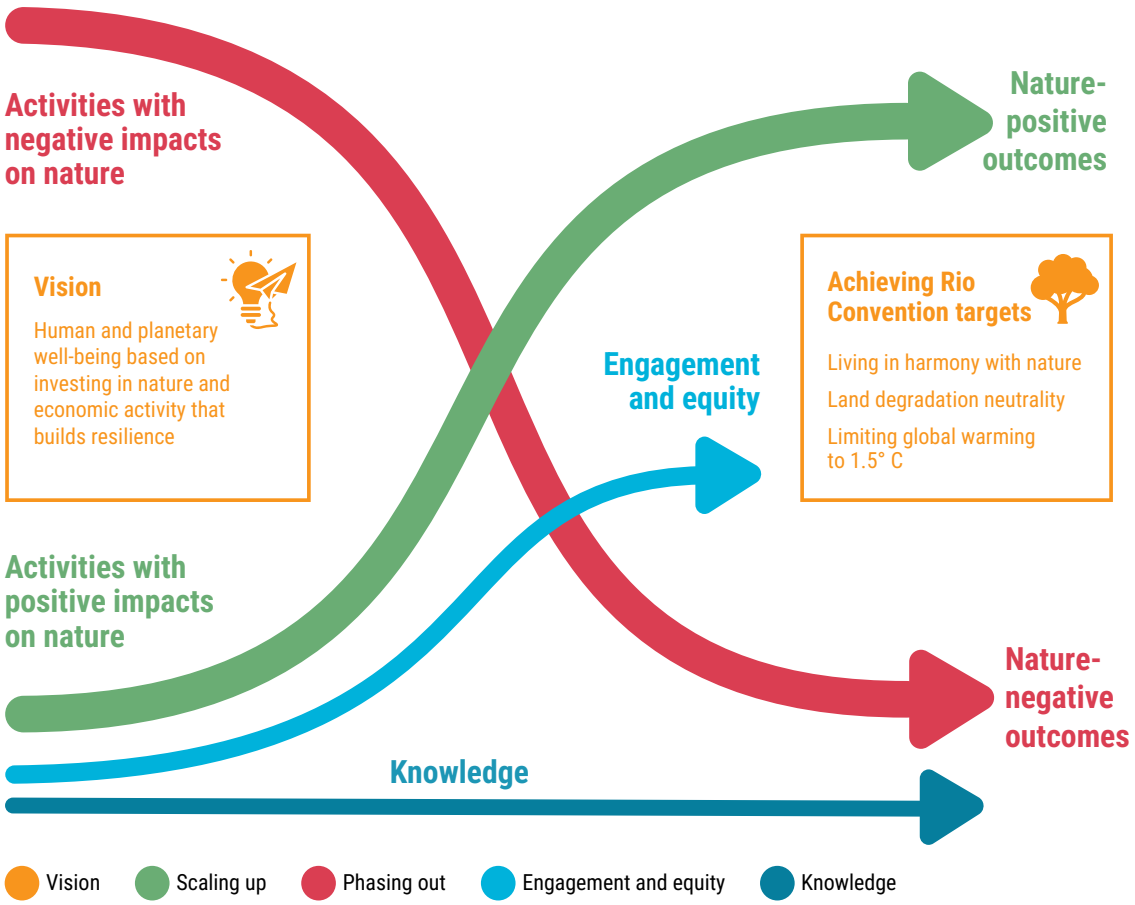
5.1 A Nature Transition X-Curve

To spark the 'Big Nature Turnaround', this report proposes a pragmatic conceptual framework with transition pathways that set out leverage points towards a future nature-positive economy. These leverage points represent actions for governments, financial institutions and businesses to tackle nature-negative finance and increase investment in nature (see the Technical Annex for a full list). It is only by implementing the Nature Transition X-Curve across sectors that the US$7.3 trillion in global nature-negative finance can be phased out and repurposed.

Transformative change on this scale is challenging but possible. Reforestation of degraded land at a national scale in Costa Rica was enabled through the introduction of financial incentives through a levy on fossil fuels. In Denmark the transition away from fossil fuels and to on- and off-shore wind was incentivised through energy taxes allocated to wind energy research, feed-in tariffs and carbon taxes (UNFCCC 2023). This type of change requires vision with strong policy signals, grounded in actionable evidence-based transition plans.

The Nature Transition X-Curve (Figure 25) illustrates how transformative change is actioned through transition pathways (Wittmer *et al.* 2021; Hebinck *et al.* 2022). Achieving nature-positive outcomes requires phasing out finance for activities that drive the loss of nature (red line) and phasing in (scaling up) finance for activities that support nature (green line). Enabling conditions for the transition include the creation of actionable knowledge to reshape existing practices (dark blue line), approaches for engagement and equity for key stakeholders (light blue line), particularly IPs and LCs and the development of shared vision (orange box). Aligning this vision with goals set by the Rio Conventions (orange box) can help inform the pathways needed (Wittmer *et al.* 2021).

Figure 25: The Nature Transition X-Curve – A framework for the transition to a nature-positive society



Note: Authors' illustration. Building on Loorbach *et al.* 2017; Wittmer *et al.* 2021; Hebinck *et al.* 2022.

Transition planning towards nature-positive outcomes requires action by government, central banks and supervisors, financial institutions and corporates as well as IPs and LCs and local actors. By using this framework actors at different scales can develop tailored Nature Transition X-curve prioritising the leverage points and activities relevant to them.

Distinctions can be made between short-term actions that provide the foundation for medium-term developments, and those that set the stage for long-term transition. Together they can achieve the needed transition across sectors. Early initiatives such as assessing and disclosing nature impacts and dependencies, promoting nature financing instruments and pilot projects, may support longer-term systemic goals. However, incremental change through transition plans will not be sufficient to avert the climate, nature or ecosystem degradation crises affecting so many communities already. Urgent systemic transformation is critical (IPBES 2019; IPBES 2024a).

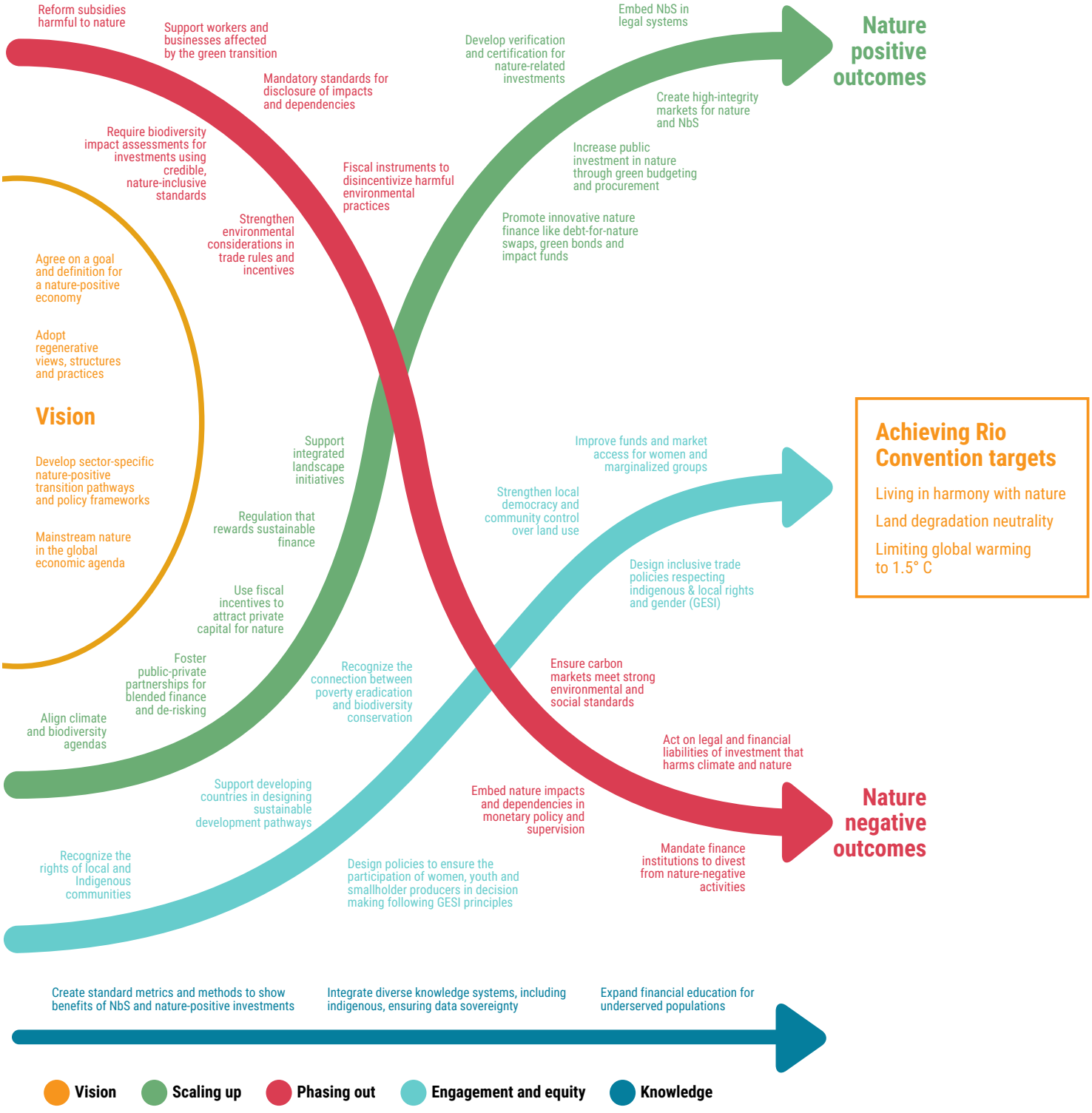
5.2 A Nature Transition X-Curve for policymakers

To illustrate how the Nature Transition X-Curve can be applied, this section offers an X-curve for policymakers (Figure 26). To drive the transition towards nature-positive outcomes, clusters of leverage points for policymakers are identified. The leverage points cover different themes such as governance, laws and policy reform, systemic coherence and integration, equity rights and participation.

A selection of leverage points is shown in coloured boxes along the transition pathways. Red boxes indicate what should be phased out over time and the green boxes identify what should be phased in or scaled up. Knowledge (dark blue), engagement and equity (light blue) and vision (orange) are essential enabling conditions. The mapping does not reflect priority, relevance, effectiveness or sequencing of implementation, which will depend on local context. The Technical Annex has a full list of leverage points.

The X-curve can inform the development of strategies for more sustainable finance action by different actors. For example, certain departments within governments and financial institutions may focus on standards, metrics and data, while others may focus on instruments, alignment with processes and capacity building. However, it is critical that strategies like climate transition plans at national and corporate level are coherent and create synergies. By identifying leverage points for transformative change, policymakers can target actions that form the basis of a transition plan.

Figure 26: Nature Transition X-Curve for policymakers



Note: Authors' illustration.

5.3 Using the X-curve to inform action

Developing a vision

A whole-of-government approach to climate, biodiversity and restoration helps to ensure policy coherence across sectors in phasing out finance that is negative for nature and promoting finance with nature-positive outcomes.

Integrating NbS and a vision for a nature-positive economy into National Biodiversity Strategy and Action Plans (NBSAPs), Nationally Determined Contributions (NDCs), Land Degradation Neutrality (LDN) strategies and other national strategies, e.g. related to bioeconomy, can provide an opportunity for creating synergies in implementation and financing across the Rio Conventions and the SDGs.

In parallel, jurisdictions like China and the EU are developing legally binding reporting requirements for corporations and financial institutions (GBF Target 15). Governments are implementing national accounting systems integrating nature following guidance from the System of Environmental Economic Accounting (SEEA) (GBF Target 14). Understanding human-nature connectedness should be mainstreamed and an integral part of education, health, spatial planning, infrastructure development, communication and art. These actions have the potential to shift mindsets and paradigms towards more nature-based principles. Broad-based adoption of regenerative policies and practices can push social norms away from consumerism towards more sustainable lifestyles. It is also important to recognise and integrate diverse forms of knowledge, worldviews and values including those of IPs and LCs, many of which have deep knowledge and relationships with nature.

Governments should support the development of a global standard on nature. In early 2024, the International Sustainability Standards Board (ISSB) decided to initiate work on nature-related issues and recently announced that it will draw on the recommendations of the TNFD. Following the release of the International Financial Reporting Standards (IFRS) S1 standard on sustainability and the IFRS S2 standard on climate-related disclosures, a third standard on nature would help to establish a global baseline on nature reporting. There is growing support – 77 per cent of investors would like to see a nature standard (TNFD 2025).

Phasing out nature-negative finance

If policymakers repurpose harmful subsidies and eliminate incentives for nature-negative activities, they can help enable incentives for nature-positive outcomes and support workers and businesses in affected sectors. This includes re-training, dedicated credit lines, transition assistance and alleviation measures to promote a just transition (UNDP 2024).

Biodiversity should be embedded in central bank and financial supervisory mandates to mainstream nature into supervisory frameworks and monetary policies. Metrics on biodiversity impacts and dependencies could become part of portfolio management and drive financial sector alignment. This includes requiring all large companies and financial institutions to systematically assess, monitor and publicly disclose their nature-related risks, impacts, dependencies and opportunities (DIRO) by enacting binding disclosure laws and harmonising standards (e.g. TNFD, CSRD and ISSB).

Public and private finance can work against each other when providing conflicting incentives. Nature-positive outcomes should be mainstreamed, and policy coherence prioritised across ministries including ministries of finance (German Development Cooperation 2025). Improving collaboration and governance frameworks for the protection and management of shared and transboundary natural resources is critical for ensuring sound ecosystem management. Mainstreaming of nature across the global economic agenda can help identify and phase out nature-negative finance, supported by Key Performance Indicators (KPIs) to align governments, businesses and financial institutions with Rio targets (Mirzabaev *et al.* 2023).

Embedding gender and social equality in disclosure laws and standards will enhance inclusive, effective and sustainable outcomes. Such information can guide investors in decision making on divesting from assets related to nature-negative impacts or engaging with clients to promote climate and nature transitions (Finance for Biodiversity Foundation [FfBF] 2022). This can be facilitated by embedding NbS into legal

systems and incentives that promote nature-positive finance flows such as taxonomies and standards defining criteria for investment in NbS, criteria defining nature-negative finance and establishing "do no harm" guidance.

Governments, finance and business need to take account of the growing legal and financial liabilities associated with investments that harm the climate and nature. The recent International Court of Justice (ICJ) Advisory Opinion affirms States can be held internationally responsible for failing to meet their obligations to prevent and address climate change. As part of due diligence, governments should regulate private actors, including financial institutions, whose investments may contribute to nature and climate-destructive activities (König-Sykorova *et al.* 2025).

Box 2: Finance sector roadmap

A finance sector roadmap has been developed to guide how the global financial system should respond to and align with the GBF. This strategic framework outlines the critical role financial institutions must play in supporting biodiversity conservation and sustainable development goals. A detailed report card was released at CBD COP16, providing an assessment of progress and identifying key areas where the financial sector needs to accelerate biodiversity-related initiatives (CBD 2025). Another report will be presented at COP17 in Armenia in 2026. This report will feature actions and implementation strategies for financial institutions to further integrate biodiversity considerations into their operations and investment decisions.

Scaling finance for nature-positive outcomes

By prioritising efforts to catalyse and unlock private capital for NbS and nature, policymakers play a key role in promoting sectoral strategies, supporting green-finance instruments, such as biodiversity-linked bonds and blended public-private finance.

Governments can introduce regulations and fiscal incentives that reward early adopters of sustainable finance models and foster public-private partnerships to de-risk nature-positive investments. Governments can also support innovative economic instruments including insurance products that integrate nature-related risks and opportunities, debt-for-nature swaps, biodiversity-focused green bonds, impact funds, seed-funding for nature-positive businesses, microcredits, digital services and other experimental pilots that can catalyse new markets (BIOFIN 2025). To ensure credibility and additionality, governments must support development of standard metrics, baselines and methods for measuring the benefits of NbS for robust verification and certification.

Scaling up NbS requires demonstrating their economic value and integrating them into public finance and development strategies.

NbS investment can be scaled by showcasing their cost effectiveness and ability to generate revenues (Economics of Land Degradation [ELD] 2013; Verdone *et al.* 2017; Thomas *et al.* 2024). For example, integrating NbS into green-grey infrastructure not only enhances public benefits from nature (e.g. flood control, urban cooling and recreation) but also reduces costs (e.g. in stormwater treatment, provision of clean drinking water, avoided healthcare costs), making NbS an economically attractive option (European Investment Bank 2023). Governments can increase public investment in nature through "green budgeting" and "green public procurement" and scale concessional finance, including preferential agricultural credit/loans. Creating national and global funding mechanisms that promote NbS can support the SDGs (Cumming *et al.* 2017).

Greening public finance can also "nature proof" ODF. Mainstreaming nature into the global economic agenda by establishing requirements for national and international finance institutions to remove nature-negative lending and addressing sovereign debt challenges that hinder investment in nature can help phasing out nature-negative finance and support more coherent finance strategies for nature. Ensuring that

NbS are integrated in ODF and development funds (e.g. Global Environment Facility) supports alignment of finance with Rio targets. Establishing science-based metrics and baselines for monitoring and verifying impacts of investment is critical to ensure credibility, create trust and avoid greenwashing.

Box 3: Scaling revenue for nature

While much of the discourse on domestic NbS and nature finance focuses on spending, the sustainability and sufficiency of government revenues is equally important. This is critical in developing economies, where tax-to-GDP ratios are low and fiscal space is constrained. Tax revenue generated by increased economic activity associated with NbS can strengthen the business case for public actors (Triodos 2025). Growing opportunities lie in carbon and biodiversity pricing instruments, including emissions trading systems (ETS) and carbon taxes. In 2023, income generated through regulated sources under ETS reached US$240 billion (International Carbon Action Partnership [ICAP] 2024; World Bank 2024). In parallel, government revenues from carbon taxes, currently applied to just under five per cent of global emissions, rose from US$25 billion in 2020 to US$33 billion in 2024. Around 52 per cent of carbon revenues (US$47 billion) have been used for climate and nature, with half of jurisdictions dedicating all or part of revenues to this aim (Institute for Climate Economics [I4CE] 2024).

Revenue generated from biodiversity-related taxes were roughly US$10.9 billion (mean average 2020–2022), with 92 per cent in OECD countries. This represents only 0.06 per cent of global tax revenue (OECD 2024a). Strengthening domestic revenue mobilisation through progressive taxation, subsidy reform and the integration of natural capital accounting is vital to align public budgets with biodiversity targets in national development plans and global frameworks, such as the GBF. The Revenues for Nature Guidebook (Green Finance Institute 2025) series details several models that governments can apply or support to increase nature-related revenues.

To unlock private sector investment in NbS, public policy can create the right incentives, reduce risks and support viable markets that reflect the full value of nature as well as push forward regulatory reform where needed.

Many ecosystem services are public goods and provide multiple benefits that may not have direct private financial returns but do support resilience (e.g. in supply chains) which can generate cost savings and mitigate financial losses. Fiscal and policy instruments (e.g. through fiscal transfers) can provide market signals that account for the many benefits provided by nature and to catalyse private investment in NbS. Public finance can play an important role to mobilise private sector finance for NbS by co-financing and de-risking investment through blended public-private finance solutions, green bonds, insurance schemes, debt-for-nature swaps and others (UNDP BIOFIN *et al.* 2024)

Multilateral Development Banks (MDBs) can play an important role in enabling public-private partnerships and blended finance schemes (OECD 2025d). Engagement of public and private financial institutions is critical. This includes scaling concessional finance providing more favourable conditions for investment in NbS or insurance products that use NbS to build resilience and de-risk insurance schemes (UNDP BIOFIN *et al.* 2024).

Policymakers play a critical role in exploring and incentivising opportunities to expand the implementation of nature-based solutions across the real economy.

NbS are being implemented to construct wetlands around cities to avoid flooding whilst delivering a consistent water supply. Green urban spaces reduce 'heat island effects' during summer months plagued by increasing heatwaves. In utilities, energy transmission lines can create corridors for wildlife, and offshore windfarms can be retrofitted to create net-positive reefs for marine biodiversity. Self-healing concrete using bacteria to prolong the life of buildings is emerging as a new cost saving measure, whilst in apparel, mushrooms can be grown to deliver vegetable-based leather for shoes

or handbags. The *Little Book of Nature Business* sets out an 'investment opportunity framework for nature' that offers over 100 case studies of scalable opportunities in business today (Little Book of Nature Business 2025). The TNFD provides more limited guidance and use cases on several nature opportunities (TNFD 2023b).

If market-based approaches for NbS, such as carbon and biodiversity markets, follow robust environmental and social standards, they can contribute meaningfully to scale up investment in nature-positive outcomes, including safeguarding integrity and equity. Seed funding for nature-positive businesses can help to promote innovative approaches and experimental spaces for, for example, enterprises that use nature as a core element of their products and/or services e.g. regenerative agroforestry.

Engagement and equity for rights-holders

NbS are most effective when they are locally grounded, inclusive and equitable. Promoting local leadership in the design and implementation of NbS ensures that interventions are context-specific and responsive to local ecological, cultural and social dynamics.

Gender and social equality are critical dimensions of inclusivity. Local stakeholders, particularly IPs and LCs, hold key rights over land and resources and should lead (or at minimum be engaged fully and supported to participate) in the design and implementation of NbS. This includes free, prior informed consent (FPIC) of IPs and LCs and protecting land and access rights when investing in nature as well as integrating customary knowledge and worldviews into the design of NbS and related finance mechanisms. Ensuring equity among actors requires participatory processes fostering inclusion and co-design, enabling actors to assert their rights and determine their futures. Transforming to a nature-positive economy requires creating fair and equitable models of working with nature including benefit sharing of nature assets and financial returns, valuing equally nature and social outcomes. Transformative knowledge and the equity of local actors is key for designing and financing nature transition plans.

Policymakers should work to reduce power inequalities between actors including those negatively impacting women to ensure that finance flows into nature-positive activities while supporting a just transition.

This can be done by using participatory processes, including co-creation, co-monitoring, co-evaluation and citizen science in the process of developing and implementing NbS (IISD 2024). Recognising the connection between poverty eradication and biodiversity conservation is important as many people depend on ecosystems for their livelihood (UNEP FI 2023). This can include promoting financial education programmes for underserved populations and creating better access to funds and markets by women and marginalised groups (Rubio *et al*. 2021). Protection for environmental defenders/activists and supporting students to become ecological leaders can promote ownership and the long-term success of NbS. Governance structures at international financial institutions could be revised to empower nature-rich countries in financial decision making, including more inclusive trade policies that respect ambitious environmental standards.

Knowledge

Enhancing data and knowledge systems, including tools and indicators to track progress, enables policymakers to foster investment aligned with nature-positive outcomes.

Ensuring accessibility and coherence of data allows investors, regulators and communities to make informed decisions. Enhancing access to open-source, location-specific measurement tools that help quantify impacts and dependencies on ecosystems can complement existing sector-specific assessment tools like ENCORE (2025). Accounting for the multiple benefits from ecosystem services should become an integral part of assessing the costs and benefits of investments, for example, as part of environmental impact assessments (e.g. infrastructure development), regulatory impact assessments (e.g. the effects of laws and regulations such as subsidies) and budget decisions (e.g. public procurement). Establishing standards for impact accounting to estimate the costs of ecosystem service loss and the

benefits from restoration can support more informed investment decisions (VBA 2025).

However, not all benefits can be adequately expressed in monetary terms as nature provides multiple values and preferences, and priorities differ among stakeholder groups. Hence, such approaches should recognise multiple forms of knowledge, worldviews and values, including those of IPs and LCs. Recognising the benefits of nature including its contributions to human health as well as the rights of nature is integral to achieving more positive outcomes for people and nature. Furthermore**,** by exploring the role of emerging technologies (e.g. using blockchain and artificial intelligence (AI) for supply-chain transparency and traceability) governments can support the generation of high-quality data, which can create transparency and trust and drive investments toward more NbS with multiple public and private benefits.

BOX 4: State of Finance for Nature in Colombia

Colombia is one of the world's most biodiverse countries, home to nearly 10 per cent of known species across ecosystems that span two oceans, the Amazon rainforest, deserts and the Andes. This richness offers potential for eco-tourism, sustainable agriculture and a bioeconomy which can drive inclusive growth and resilience. However, the country has experienced alarming rates of deforestation even within protected areas, losing over three million hectares of forest in the past two decades, driven by agriculture, illegal activities and infrastructure development. This trend risks neutralising the forest carbon sink in the Amazon (Flores *et al*. 2024), undermining ecosystem services vital for communities, while climate change is intensifying floods and droughts.

NbS present a range of direct and enabling activities to mitigate biodiversity loss, climate risks and deforestation, while supporting rural and indigenous livelihoods and advancing the transition to a nature-positive society. There is a strong case to harness the potential of NbS as cost-effective solutions in Colombia, further strengthened by synergies across climate, biodiversity and avoided land degradation. In 2023, around half of all ODF targeting NbS received by Colombia delivered against all three Rio Conventions.

NbS finance flows to protected areas, blue-green infrastructure, wetland and landscape restoration, climate-smart agriculture and integrated land and water management. Public domestic expenditure on NbS in Colombia grew from US$1.2 billion in 2022 to US$1.5 billion in 2023. Biodiversity expenditure averaged US$0.54 billion annually between 2010 and 2020, far below the US$900 million recommended (0.3 per cent of GDP) to achieve Rio targets.

Agriculture and forestry companies contribute substantially to private NbS finance with US$0.5 billion annually invested in sustainable commodity sourcing and production. Private sector engagement is expanding, with over US$1.2 billion in green bonds issued in 2023, alongside biodiversity credits, PES schemes and carbon tax revenues exceeding US$0.6 billion – mostly linked to forestry and REDD+ initiatives.

To strengthen Colombia's policies, an integrated approach to support the transformation can potentially improve the investment environment without negative social consequences. The transformative change framework in Table 4 is clustered around five building blocks.

Colombia's path to a nature-positive economy depends on systemic change. By aligning finance with ecological priorities, strengthening governance tools like the green taxonomy and redirecting harmful subsidies, Colombia can accelerate conservation and restoration action. Empowering IPs and LCs as co-implementers ensures legitimacy and long-term stewardship, while innovative blended finance can unlock the scale of investment required.

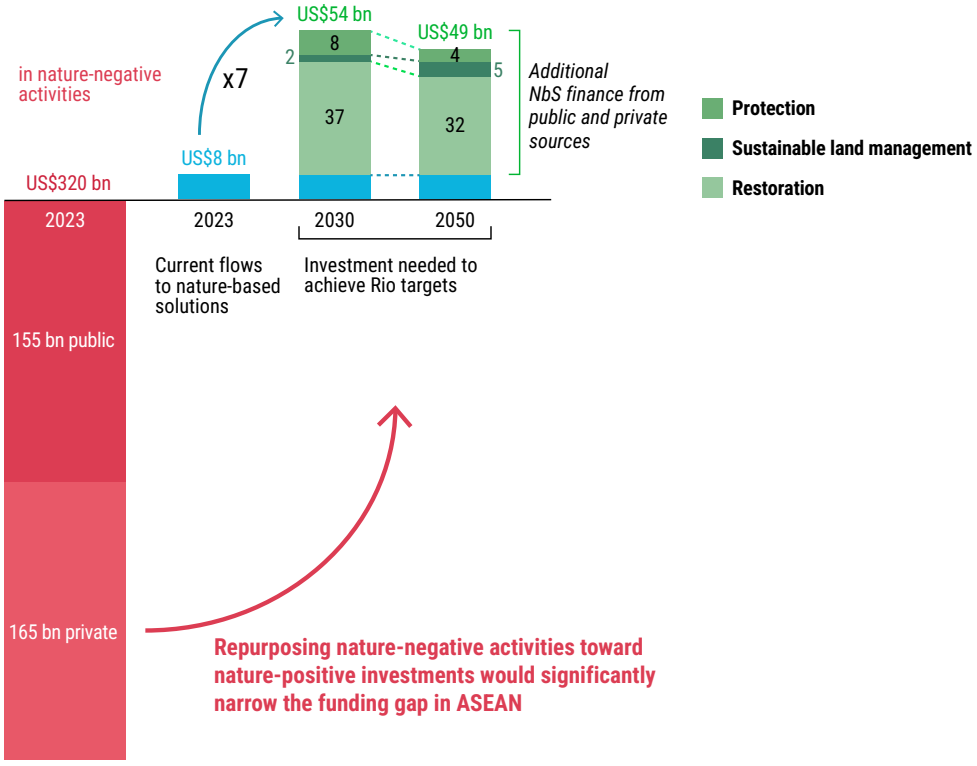
Table 4: Transformative change framework for policymakers in Colombia

Current status	Identified leverage points
Vision: Colombia has adopted a rights-based and biocentric approach, embedding nature into governance and peacebuilding, aiming for a nature-positive society by reversing biodiversity loss by 2030. National policies—including Territorial Integrated Climate Change Management Plans, the 2020 National Bioeconomy Strategy, the Biodiversity Action Plan 2024–2030 and the Green Growth Program—support green jobs and bioeconomy growth through fostering sustainable sectors.	• Secure legal and economic rights for IPs as NbS co-implementers • Embed NbS targets in long-term strategies like the Bioeconomy Strategy, updated NDCs and NBSAPs
Scaling NbS finance: Investments in NbS are growing through innovative financing, PES, biodiversity credits and green bonds, though alignment and scale remain limited.	• Set clear policies and incentives • Tailor NbS to local ecosystems • Scale investment through incentives, sustainable debt products and blended public–private finance • Support nascent nature markets, e.g. biodiversity credits
Phasing out nature negative: Public EHS (US$7.5 billion for fossil fuel, US$2.5 billion to agriculture) and private nature-negative investments (US$9.7 billion) outweigh finance to NbS. This undermines progress but offers opportunities to re-direct these flows and unlock cost-effective alternatives.	• Repurpose fossil fuel subsidies • Integrate NbS into climate policy and channel climate finance to ecosystem restoration for carbon removal • Require business and financial institutions to assess and disclose nature-related financial risks and dependencies
Knowledge: The Green Taxonomy provides a foundation for classifying sustainable activities, but NbS need stronger metrics, registries and transparency mechanisms. Technical expertise and standardised tools are key for scaling investments.	• Expand the Green Taxonomy to prioritise NbS projects • Create a centralised NbS registry • Develop national metrics and expand training and technical assistance to local actors
Engagement and equity for rights-holders: IPs and LCs manage vast areas and are central to NbS through defence of nature, stewardship, traditional and local knowledge. Supporting local leadership ensures legitimacy, ownership and sustainability of NbS projects.	• Recognise and enforce the rights of IPs and LCs and nature • Build capacities, increase engagement and ensure equity for IPs and rural communities • Establish collaborative models for NbS design, implementation and monitoring

BOX 5: State of Finance for Nature in ASEAN

Finance flows for NbS in ASEAN need to increase seven-fold to reach Rio Conventions targets by 2030 (Figure 27). An SFN study in ASEAN provides an overview of current finance for NbS and nature-negative finance flows and suggests how to get the wheel turning to close the NbS investment gap. Over the past decade, ASEAN[3] countries have made significant progress in integrating NbS into national development priorities, leveraging regional cooperation and mobilising public and private investment for environmental sustainability. Several ASEAN Member States (AMS) have embedded NbS in climate, biodiversity and land degradation neutrality strategies, launched pilot projects that demonstrate real impact and enhanced institutional frameworks to catalyse finance for nature. These efforts reflect a growing recognition across the region that investing in nature is not only essential for ecological resilience but also offers significant socio-economic benefits.

Figure 27: Current NbS finance flows, NbS investment needs and nature negative finance in ASEAN



Source: ASEAN SFN Regional Report (forthcoming). Values are in US$ billion 2024 prices.

Despite growing NbS finance – the NbS investment gap remains substantial:

- Public domestic NbS expenditure increased by seven per cent to US$4.8 billion from 2022 to 2023.
- Private NbS finance reached US$2.6 billion in 2023 via market-based and results-based mechanisms.
- Finance flows harmful to nature are estimated at US$320 billion in 2023.
- NbS investment needed to reach Rio targets by 2030 is projected at US$54 billion annually. Current NbS finance flows need to increase seven-fold to close the investment gap.

3 ASEAN aims to accelerate the economic growth, social progress, and cultural development in the region through joint endeavours in the spirit of equality and partnership. https://asean.org/what-we-do/. The Association of Southeast Asian Nations (ASEAN) was established in 1967 and has 10 Member States -Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Leverage points for transformative change in ASEAN

Vision

ASEAN's commitment to sustainable development and ecosystem resilience is reflected in its biodiversity and climate frameworks. There are signs of a regional consensus on the importance of nature-positive development. To scale up, this vision must be consolidated across economic, sociocultural and environmental pillars and anchored in investment, trade and financial strategies. The ASEAN taxonomy for sustainable finance represents a crucial step in this direction.

Scaling up finance for nature-based solutions

ASEAN is engaging in multiple efforts to expand finance for NbS, e.g. the ASEAN Climate Finance Access and Mobilization Strategy, the ASEAN Green Initiative and ASEAN Guidelines on Nature-Based Solutions. The leverage points below offer sector-specific policy measures that can support the formulation of national and regional policies.

- Developing policy and institutional frameworks for mainstreaming NbS;
- Enabling private investment in sustainable forestry through nature-related risk assessment and monitoring;
- Leveraging high-integrity carbon markets to channel finance into NbS;
- Scaling up financing via payments for ecosystem services schemes;
- Bridging data and knowledge gaps on NbS by harnessing existing knowledge platforms;
- Scaling market demand for NbS through sustainable public procurement; and
- Mobilising private capital for NbS in agriculture through de-risking instruments.

Phasing out nature-negative

The ASEAN Joint Statement on Climate Change to COP29 (2024) calls for stronger coherence across public policy, sustainable finance taxonomies and disaster risk financing – a platform from which EHS reform efforts can gain political traction. Clear definitions, impact screening and regional cooperation mechanisms (e.g. through the ASEAN Disaster Resilience Platform) can support the reallocation of subsidies and investment toward more regenerative sectors. The ASEAN Taxonomy for Sustainable Finance offers already guidance. The ASEAN SFN presents the repurposing of environmentally harmful subsidies through time-bound transition plans as a key leverage point for phasing out nature-negative finance.

Engagement and equity

Equity, engagement and empowering stakeholders are essential to drive the nature-positive transition. ASEAN's frameworks recognise this through the promotion of social forestry, community-based natural resource management and inclusive urban adaptation strategies across NDCs, NBSAPs and LDNs. However, access to finance, technical support and decision-making power remains uneven. Regional efforts, such as the ASEAN Socio-Cultural Community Blueprint and the ASEAN Working Group on Climate Change Action Plan, should be used to enhance capacity-building and equitable access to nature-positive finance. This includes supporting IPs and LCs, SMEs and local governments through targeted financing mechanisms, inclusive governance models and fair benefit-sharing arrangements.

Knowledge

Knowledge gaps and data limitations on private finance flows, biodiversity outcomes and ecosystem service values hinder scaling up NbS finance. Data gaps must be closed and systematically integrated in national and regional databases. Standardised frameworks and regional cooperation on monitoring systems can enable transparent, harmonised tracking of nature-related financial flows. Additional potential lies in expanding knowledge platforms and regional dialogues to share experiences, harmonise methods and promote innovation.

5.4 Concluding reflections

What kind of society do we want to live in? The GBF challenges governments to make a choice between a business-as-usual economic trajectory towards breaching all nine planetary boundaries, a climate that is even hotter than today and oceans with more plastic than fish, undermining the stability of the global economy and the financial system. Or a more sustainable, climate resilient and nature-positive society, where NbS are integrated across economic sectors, from real estate and infrastructure to manufacturing and agriculture. Some opportunities include:

Opportunities in cities. The choice is between cities that are concrete jungles, unable to release heat absorbed from the warming climate or cities that adapt and integrate green infrastructure such as parks and wetlands for recreation, cooling and flood control while delivering human well-being, liveability and productivity.

Opportunities in food systems. Industrialised agri-food systems, where soils are exhausted and dependent on chemical inputs, are in a race to the bottom where environmental costs are externalised to society and profits are concentrated in a few big businesses. The alternative is agri-food systems that transition to regenerative practices, improving soil health, deploying integrated systems (including agroforestry) to optimise diversity, yields, livelihoods and nutrition with improved ecological conditions.

Opportunities in infrastructure. Governments can continue to encourage grey infrastructure that is increasingly vulnerable to weather extremes and takes little account of impacts on nature. Alternatively, governments can use NbS as infrastructure, for example, oyster reefs to clean polluted port water, wetlands as cost effective filtration systems for municipal water utilities and nature-based self-healing building concrete to reduce maintenance costs of roads.

The 'Big Nature Turnaround'. The goal is to re-direct the US$7.3 trillion contributing to nature-negative outcomes and to re-purpose it to deliver nature-positive outcomes. The Nature Transition X-Curve suggests how this can be done. The evidence and analysis of NbS finance allows society to track how it is doing in relation to the goals set out by the Rio Conventions. We encourage readers to use the findings to visualise what a more climate resilient and nature-positive society looks like and how it can become a reality.

Investing in nature. We should not look at investing in nature as a 'nice to have' or something that is disconnected from the economy. The only way to meaningfully increase investment into NbS and to reduce nature-negative capital flows is by embedding a nature-positive approach into every aspect of our lives, in every sector across the economy, so that it becomes a central theme of government expenditure and in investment decisions of financial institutions and businesses. We hope this report will support more informed lending and investment decisions. In the end, the prosperity of the economy and the stability of the financial system depends on intact nature (NGFS 2022).

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Technical Annex

Nature-negative finance

Table A1: Public nature-negative finance: Environmentally Harmful Subsidies (EHS)

Source dataset(s): IISD-OECD fossil fuel subsidy tracker (IISD-OECD 2025), OECD Estimate of Support to Agriculture (OECD 2024a), EarthTrack (2022; 2024).

Approach: A literature review identified sources of subsidies targeting agriculture and fossil fuels. Annual estimates for country-level fossil fuel subsidies are from Fossil Fuel Subsidy Tracker (IISD-OECD 2025) that covers 192 countries. Agricultural EHS estimates are derived from annual Estimates of Support to Agriculture (OECD 2024a) and are calculated as the 'most distorting support', which is the sum of positive market price support, output subsidies and input subsidies which allow unconstrained use of variable inputs. Positive market price support encourages overproduction by raising the price of output above the market price, while subsidies which do not constrain the use of inputs have harmful impacts on nature (OECD 2024b). Estimates on water, transport, forestry, construction, fisheries, non- energy mining and plastics are from EarthTrack (2022; 2024) and adjusted for constant 2024 US$ prices. For these categories, 2019 to 2021 constant values are assumed to be the 2022 estimate, where available, or 2023 value otherwise.

There are significant data gaps, particularly at sectoral and sub-industry level, and for mining, manufacturing and infrastructure sectors in emerging and developing economies. Moreover, the size of a subsidy may not reliably indicate the scale of its harmful impact, as even small subsidies can have substantial environmental damage depending on local ecological conditions (Biodiversity Finance Initiative [BIOFIN] 2024b). Causal links between subsidies and nature degradation are further obscured by limited spatial biodiversity data and a lack of standardised tracking, underscoring the urgent need for better data and methodologies (IMF 2024).

Improved data sources: Data on EHS used in SFN 2026 is improved. IISD fossil fuel subsidy tracker covers 192 countries compared to 41 countries in IEA data used in SFN 2023. For agriculture, the OECD method to estimate the most distorting support is replicable and traceable to source data. Additional subsidy types are included: mining and quarrying, plastics manufacturing and construction.

Changes due to methodological upgrade: Both SFN 2023 and the current edition extract estimates of EHS from literature instead of applying scaling factors. Due to improved data and the inclusion of additional subsidy types, estimates of EHS have increased.

Units, data granularity, notes: Units are in real billion 2024 US$ prices. Data for fossil fuel and agri-subsidies is available at the country level. Other subsidy types are only available on the regional/global level, and partly available on annually from 2014 to 2023.

Table A2: Private nature-negative finance

Source dataset(s): Refinitiv/LSEG (2025), including private capital investments via loans, equity and bonds; ENCORE pressure materiality ratings (2024).

Approach: The updated methodology aims to identify and quantify private finance flows that contribute to nature degradation, i.e. nature-negative finance flows. Building on the SFN 2023 framework, this analysis leverages ENCORE's materiality assessments of direct nature-negative impacts and links economic activity classifications (presented in ISIC classification) to private finance datasets using LSEG/Refinitiv. This mapping of ISIC to Refinitiv makes it possible to quantify finance flows that exert direct pressure on ecosystem services.

Mapping economic activities to pressures (nature negative): The ENCORE framework provides the basis for assessing how economic activities potentially impact ecosystem components, which provide ecosystem services. ENCORE assigns pressure materiality ratings to pressures resulting from a wide range of economic activities. These pressures can result in impacts on ecosystem components, which underpin ecosystem services. ENCORE uses a five-point scale for materiality ratings: Very High (VH), High (H), Medium (M), Low (L) and Very Low (VL). Pressure materiality ratings are location-agnostic and differ only by economic activities. Pressures in the ENCORE tool include a range of environmental impacts such as land and water use, emissions to air, water and soil, resource extraction, pollution and disturbances like noise and light.

In this report, an activity is classified as nature negative if it is assigned a high and/or very high materiality rating (H, VH) for any of the 13 pressures, as identified in ENCORE. For example, industries with activities rated as "high" for one type of pressure (e.g. land use, soil and water pollution) are considered as nature negative following an attribution scheme.

Use of ENCORE update: SFN 2026 utilises the update of the ENCORE tool (October 2024), which introduces the ISIC Revision 4 sectoral classification framework at the class/group level instead of TRBC production processes. A production process is no longer allocated to multiple different industries, but rather each economic activity is analysed individually. This allows more accurate identification and measurement of pressure links on natural capital and avoids overestimation of nature-negative finance flows.

Improved methodology: This report uses an improved methodology based on nature-negative attribution matrix which assigns nature-negative shares to economic activities based on their materiality profiles. This tiered system links the number of pressure materiality ratings and their magnitude (VL vs. VH) to estimated nature-negative shares.. Activities that exert more severe and direct pressure on ecosystem services are assigned with higher negative attribution shares. Economic activities with at least 5 High (H) or one Very High (VH) pressure are assigned with a 90 per cent negative attribution. Similarly, the matrix assigns activities with 2 or more High (H) pressures with 60 per cent and activities with 1 High (H) pressure with 30 per cent. This graduated scale avoids binary classifications and enables a proportional assessment of harm. Activities marked with Very Low (VL), Low (L) or Medium (M) pressures receive a zero per cent attribution, reflecting minimal contribution to nature degradation.

While thresholds are not empirically derived, they are anchored in ecological reasoning. Multiple high-pressure dependencies are more likely to result in significant degradation of ecosystems if left unmitigated. The use of a 90 per cent attribution for 5H or 1VH assumes strong systemic pressure on ecosystems from such activities, consistent with conservation science that emphasises the compounding impact of multiple high stressors. Similarly, assigning 60 per cent to 2H or more, and 30 per cent to 1H introduces a more refined scale. No weighting was applied to the 13 materiality pressures so materiality pressures with the same rating were assumed to have the same direct impact on ecosystems.

Robustness and calibration: A comparison between derived shares for SFN 2026 and SFN 2023 reveals broadly consistent patterns in the concentration of nature-negative activities across key sectors, particularly in resource-intensive industries. To ensure consistency, the attribution shares were calibrated to produce estimates of nature-negative finance flows that were aligned with SFN 2023. SFN 2023 estimated US$5 trillion in global private finance flows in 2022 were associated with nature-negative activities. Using the same ENCORE materiality logic and sectoral classifications, this methodology replicates that magnitude within a reasonable margin of variation.

Units, data granularity, notes: Units are expressed in real trillion US$ 2024 prices. The year of comparison is 2023, but values for 2024 are reported in the text.

Table A3: Nature-related pressures (impact drivers) and examples

Pressure	Definition, including examples
Area of freshwater use	Freshwater area is used for the activity, including wetland, ponds, lakes, streams, rivers or peatland necessary to provide ecosystem services such as water purification.
Area of land use	Land area is used for the activity, including agriculture or forest plantation.
Area of seabed use	Seabed area is used for the activity, including aquaculture or seabed mining.
Disturbances (e.g. noise, light)	Activity produces noise or light pollution that has potential to harm organisms.
Emissions of GHG	Activity emits GHG, incl. CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).
Emissions of non-GHG air pollutants	Activity emits non-GHG air pollutants, including mono-nitrogen oxides (NOx) and Sulphur dioxide (SO_2).
Emissions of nutrient pollutants to water and soil	Activity emits nutrient pollutants that can lead to eutrophication, including nitrates and phosphates discharged to receiving water body.
Emissions of toxic pollutants to water and soil	Activity emits toxic pollutants that can directly harm organisms and the environment, including toxic substances such as heavy metals and chemicals.
Generation and release of solid waste	Activity generates and releases solid waste.
Introduction of invasive species	Activity directly introduces invasive species into areas of operation.
Other abiotic resource extraction	Activity extracts abiotic resources. Examples include volume of mineral extracted.
Other biotic resource extraction (e.g. fish, timber)	Activity extracts biotic resources including fish and timber.
Volume of water use	Water is used for the activity. including groundwater or surface water consumed.

Note: Authors' illustration based on ENCORE (2025)

Comparing SFN 2023 and SFN 2026 approaches: A comparison between the sectoral breakdown of SFN 2023 and SFN 2026 indicates a consistent distribution of nature-negative private finance. While the absolute figures differ due to updated data coverage, methodology and inflation-adjusted values, the top sectors contributing to nature degradation remain broadly unchanged. In SFN 2023, industrials led the ranking with US$1.4 trillion, followed by utilities (US$589 billion). Notably, utilities in SFN 2026 jumped to the top position due to increased investment in conventional infrastructure and electricity generation. Coal- or gas-fired power plants exert very high pressures on land, water and air quality, making the sector a major contributor to ecosystem degradation under ENCORE's materiality criteria.

These results confirm that, despite minor shifts in rankings, the underlying pattern of ecological pressure from capital allocation remains persistent. The cross-year alignment between SFN 2023 and SFN 2026 enhances the credibility of the new methodology and suggests that targeted financial and policy interventions in the top four sectors are likely to yield the most significant biodiversity and nature-related benefits.

Table A4: Nature-negative finance attribution matrix

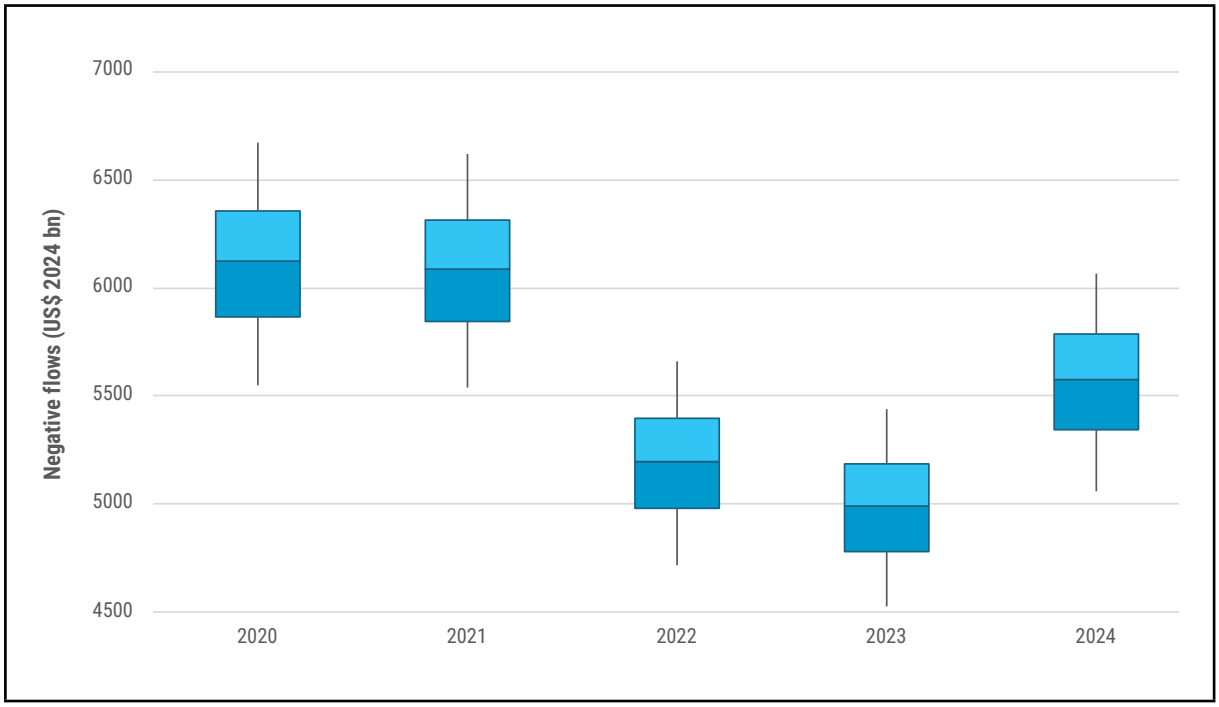
Pressure Materiality ratings	Attributed nature-negative share	# of Economic activities (rated by ENCORE) using ISIC	Example	Example Pressure	# of business activities (used in Refinitiv) in TRBC
5H or more; 1VH or more	90%	69	Extraction of crude petroleum	VH: Area of seabed use; Toxic soil water pollution …	181
2H or more	60%	12	Manufacture of tobacco products	H: Nutrient Soil Water Pollution …	46
1 H	30%	32	Manufacture of plastics	H: Non GHG Air Pollution	92
VL, L, M	0%	158	Spinning, weaving and finishing of textiles	-	575
Total	-	271	-	-	895

Note: 13 pressures are identified. There is no weighting applied, each materiality pressure is treated equally. There is no academic literature (to our knowledge) that goes a similar route in identifying finance flows to nature negative using ENCORE.

The portfolio of private capital investment analysed covers US$20 trillion per year between 2020 and 2024. Finance flows in Refinitiv/LSEG are classified using the "The Refinitiv Business Classification" (TRBC) framework. In total, the dataset covers 895 business activities, which were mapped individually to the most approximate ISIC groups (economic activity). ENCORE pressure materiality ratings are available for 271 economic activities (ISIC groups or classes) that have been mapped against 895 TRBC business activities. After each transaction (out of the US$20 trillion private capital investments) is assigned a negative share, the model aggregates the attributed values at the sector level. The result is a composite view of which sectors are driving the largest share of nature-negative finance based on the distribution of economic activities and their ecological pressure intensity.

Robustness and sensitivity testing: To assess the sensitivity of results to the assumptions in the attribution matrix, a robustness check was conducted using Monte Carlo simulation. This involved randomly varying nature-negative share attributed to each activity within a pre-defined range and recalculating nature-negative shares across many iterations. The resulting distribution allows to observe the distribution of nature-negative flows around the attribution shares and test whether observed patterns hold under alternative attribution scenarios. Results indicate that the mean of simulated values is very close to the estimated values, with the distribution of simulated values corresponding well to the pre-defined range of estimated values (Figure A1). This suggests that estimated values are not highly sensitive to moderate changes in the attribution share, and the weights are reasonably well-calibrated.

Figure A1: Boxplot of Monte Carlo simulated private nature-negative flows



Note: Authors' calculations. The lower and upper whiskers of boxes represent the minimum and maximum values of nature-negative finance in each simulation. The middle line represents the mean value of nature-negative finance for a given year.

Public finance to nature-based solutions

Table A5: Public finance: COFOG to nature-based solutions

Source dataset(s): OECD (Annual government expenditure by budget function), IMF (Government Finance Statistics), FAOSTAT (Government Expenditure), US Government Spending Explorer, National Bureau of Statistics of China.

Approach: Expenditure on five government budget functions provides the basis for domestic public NbS finance estimates: sustainable agriculture, forestry, fishing and hunting; environmental policy and other; pollution abatement; biodiversity and landscape protection; and wastewater management. Scaling factors from SFN 2023 are applied to estimate the proportion of public domestic expenditure by budget function that can be considered NbS finance.

Added value in SFN 2026: SFN 2026 provides estimates for 2023 and updated estimates for previous years based on retroactive corrections and updates in data sources). New values in the dataset include annual NbS estimates for Brazil (IMF Government Finance Statistics) and Indonesia (FAOSTAT Government Expenditure).

Units and granularity: Estimates are in real billion US$ 2024 prices. The budget function "environmental protection not elsewhere classified (n.e.c.)" is renamed to "Environmental policy and other" for comparability across SFN editions. US and Chinese budget categories were mapped to COFOG (OECD) definitions.

The quantification of public domestic NbS finance flows involved:

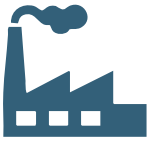
Extraction of annual values on public domestic expenditure by country and budget function from national accounts of the United States and China, OECD COFOG and International Monetary Fund's Government Finance Statistics database.

A list of NbS-relevant budget functions from SFN 2023 was used to identify expenditure aligned with the NbS definition.

Expenditures using national classification frameworks from countries not included in COFOG were mapped to COFOG to harmonise reported values across countries.

Annual expenditure across NbS-relevant budget functions was multiplied by scaling factors from SFN 2023 to estimate NbS finance in public domestic expenditure. COFOG budget functions classified as NbS-relevant appear in Table A6.

Table A6: Public budget categories for government expenditure in nature-based solutions

Sectors	Descriptions, including examples	Relevance for NbS
Sustainable agriculture, fishing and forestry 	Forestry and fishing activities or equipment, as well as the development, operation and maintenance of irrigation systems for agricultural purposes. This category also encompasses measures for the conservation, reclamation or expansion of arable land operation or support of reforestation work, pest and disease control, forest firefighting and fire prevention services.	Supports ecosystem-based management, climate adaptation, food security and biodiversity. Addresses societal goals: job creation and livelihoods in rural areas; fosters gender equality and women's empowerment through access to land, finance and training; Integrates sustainable practices, knowledge and rights of IPs and LCs.
Biodiversity and landscape protection 	Protection of fauna and flora species (including the reintroduction of extinct species and the protection of threatened species), protection of habitats (including the management of natural parks and reserves) and protection of landscapes for aesthetic values (including the reshaping of damaged landscapes for the purpose of strengthening the aesthetic value and the rehabilitation of abandoned mines and quarry sites).	Directly contributes to ecosystem conservation, restoration and biodiversity gains. Contributes to societal goals including health, water security, inclusion of IPs and LCs, gender equality e.g. women benefiting from inclusive livelihood programs tied to biodiversity.
Environmental policy and other 	Formulation, administration, coordination and monitoring of policies, plans, programmes and budgets for environmental protection.	Enabling function for NbS by providing systemic infrastructure needed to mainstream and scale up NbS implementation.
Wastewater management 	Activities such as the administration, supervision, inspection, operation or maintenance of sewage systems and wastewater treatment.	Relevant for green infrastructure and natural water filtration systems. Addresses directly the societal goal of health and well-being as well as access to safe water and sanitation services; reduces burden on women and girls as well as improves safety.
Pollution abatement 	Measures to control or prevent the emissions of greenhouse gases and pollutants that adversely affect the quality of the air; construction, maintenance and operation of installations for the decontamination of polluted soils and for the storage of pollutant products.	Supports environmental health and resilience. Contributes to health and well-being reducing exposure to harmful pollutants. Addresses gender equality as women and marginalised communities are disproportionately affected by pollution.

Note: Authors' illustration. Based on SFN (2023) and IMF GFS (2025).

Table A7 provides scaling factors applied to extract NbS flows, building on the literature and expert consultation (SFN 2023).

Table A7: Scaling factors by COFOG budget function

NbS- relevant budget function (COFOG)	Scaling factor	Source
Sustainable agriculture, forestry, fishing and hunting	0.1	TNC 2020
Pollution abatement	0.2	
Environmental policy and other	0.2	
Biodiversity and landscape protection	0.9	UNDP 2015
Wastewater management	0.1	UN WATER 2015

Note: The selection of COFOG budget functions for NbS builds on SFN 2023 and reflects functional areas of government spending that directly or indirectly support ecosystem protection, restoration or sustainable land and water management. While not all codes represent sectors, they capture public policy functions relevant for implementing NbS across domains such as agriculture, water and environmental protection. Scaling factors in SFN 2023 were not directly drawn from the indicated sources but informed further by expert opinions.

Mapping of US national accounts to COFOG budget functions Mapping of US budget categories to COFOG budget functions did not require weighting coefficients due to similar categories. For example, public domestic expenditure on pollution control and abatement are allocated to the COFOG budget function "pollution abatement".

Table A8: Mapping of US public domestic expenditure categories to COFOG

United States expenditure category	COFOG budget function
Agriculture	Sustainable agriculture, forestry, fishing and hunting
Pollution control and abatement	Pollution abatement
Recreation resources	Environmental policy and other
Conservation and land management Other natural resources	Biodiversity and landscape protection
Water resources	Wastewater management

Note: Authors' illustration. Based on SFN 2023.

Mapping of China's national accounts to COFOG budget functions. The allocation of Chinese expenditure data to COFOG required the use of weighting coefficients due to different definitions and structure of Chinese and COFOG budget categories (SFN 2023). For example, only 60 per cent of public domestic expenses under natural resources, ocean and weather can be categorised as "biodiversity and landscape protection" under COFOG.

Table A9: Mapping of Chinese public domestic expenditure categories to COFOG

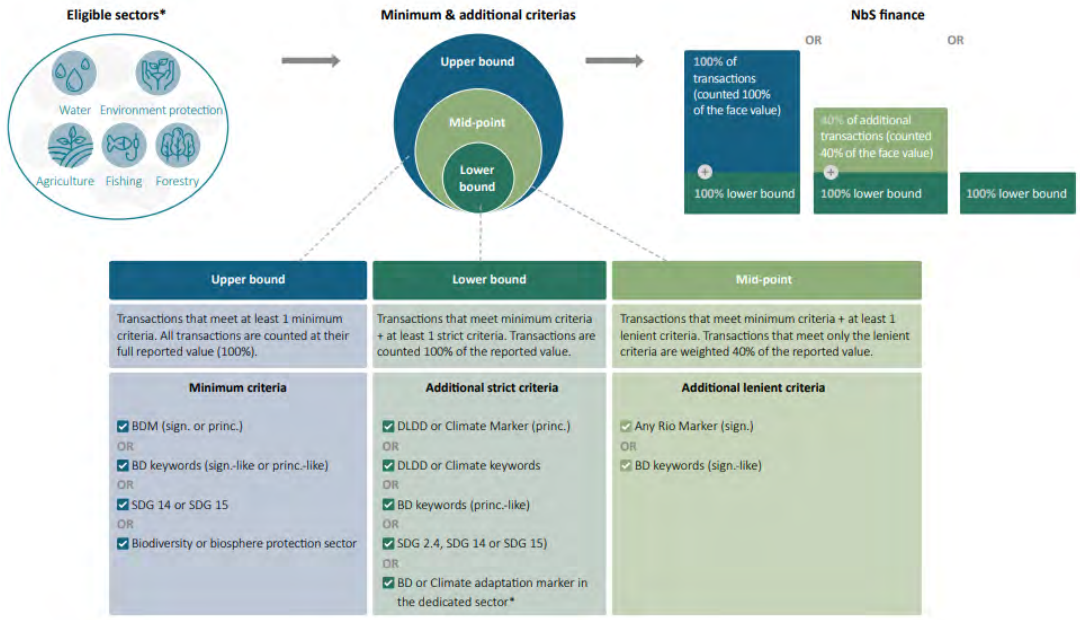
China's expenditure category	Weights	COFOG budget function
Agriculture, forestry and water conservancy	0.33	Sustainable agriculture, forestry, fishing and hunting
Energy conservation and environmental protection	0.17	Pollution abatement
Energy conservation and environmental protection	0.33	Environmental policy and other
Natural resources, ocean and weather	0.60	Biodiversity and landscape protection
Agriculture, forestry and water conservancy	0.17	Wastewater management

Note: Authors' illustration. Based on SFN 2023.

Table A10: Public finance: ODF to Nature-based Solutions
Source dataset(s): OECD Credit Reporting System (CRS) 2025
Approach: To quantify public international NbS finance flows, a structured filtering methodology was applied to OECD CRS data. This approach combines an assessment of sectoral eligibility using Rio marker classification and keyword matching to categorise finance relevant to NbS. This methodology builds on the literature and balances inclusiveness with rigour. Applying an identification strategy (Figure A2) lower, mid and upper bounds are estimated. Filters applied included: Official donors (donor), official development assistance and other official flows (measure), all channels (channel), general budget support (modality), disbursements (flow type), current prices (price base). NbS estimates were converted to US$ 2024 prices.
Added value in SFN 2026: The application of strict filtering criteria and the use of lower and upper bounds for NbS shares provides greater rigour than the scaling factors used in SFN 2023. Lower and upper bounds are more precise and **a**lign with OECD's approach. More CRS sub-sectors (32 instead of 16) are included.
Changes due to methodological upgrade: The inclusion of 36 CRS sectors instead of 16 CRS sectors results in an additional 20 per cent of finance flows identified as NbS at the mid-point.
Units and data granularity: Units are in real billion US$ 2024 prices. Data is available by donor and recipient from 2015 to 2023.

Building on the OECD-DAC system, the approach tracks to what extent ODF targets NbS. The method first estimates lower, mid and upper bounds of NbS finance. It then disaggregates NbS finance into flows that target biodiversity, climate and/or DLDD as well as the extent of overlap.

Figure A2: Identifying NbS in Official Development Finance



Note: Authors' illustration. The number of CRS sub-sectors is expanded from 16 to 39 based on the following criteria: Significant absolute value of expenditure in subsector that is Rio marked; Significant proportion of expenditure of subsector that is Rio marked; Expert judgement indicating high likelihood that a sub-sector contains NbS (based on sub-sector definitions, OECD guidance and relevant reports, e.g. WRI Adaptation NbS Report (WRI 2021), Atteridge et al. (2022); Retaining all sub-sectors included in SFN 2023: General environmental protection (CRS Category), urban development and management, urban land policy and management, rural development, rural land policy and management and disaster risk reduction.

Table A11: ODF sub-sectors targeting NbS

CRS sector / category	CRS sub-sectors
Water Supply and Sanitation	Water sector policy and administrative management; Water resources conservation.
Agriculture	Agricultural development; Agricultural extension; Agricultural land resources; Agricultural policy and administrative management; Agricultural research; Agricultural water resources; Agricultural services; Food crop production; Agricultural education/training; Agricultural co-operatives.
Forestry	Forest industries; Forestry development; Forestry education/training; Forestry policy and administrative management; Forestry research; Forestry services.
Fishing	Fishery development; Fishery education/training; Fishery research; Fishing policy and administrative management.
Industry	Fuelwood/charcoal; Agro-industries; Industrial crops/export crops; Food security policy and administrative management.
General environment protection	Environmental education/training; Environmental policy and administrative management; Environmental research; Biodiversity; Biosphere protection; Site preservation.
Other/multi-sector	River basins development; Urban development and management; Disaster Risk Reduction; Rural development.

Note: Sector and sub-sector names extracted from OECD CRS (2025b).

Example: A US$10 million forestry development project is classified as NbS due to its relevant subsector and presence of a significant-like biodiversity keyword, despite having no biodiversity Rio marker or SDG tags. While excluded at the lower bound because there are no additional stringent criteria, 40 per cent (US$4 million) is included at the mid-point and 100 per cent (US$10 million) at the upper bound due to the climate mitigation Rio marker (significant) and the biodiversity keyword. Further real world examples from the CRS database of projects that qualify for lower bound estimates are shown in the table below.

Table A12: Examples of projects consistent with lower bound estimates

Example 1: Actions by and for women to adapt to climate change: The women in action project aims to increase climate change adaptation among vulnerable girls and women in the agricultural and forestry sectors in South- and North-Kivu, with benefits in terms of the conservation and restoration of forest biodiversity. The project's beneficiaries, who will receive training on positive masculinity, are estimated to be over 5,000 men. In addition, the living conditions and food security of over 30,000 household members, young women and women will improve. Five local organizations will receive support so they can mentor young women and men in terms of implementing NbS and adapting to climate change using gender-sensitive methods, even outside the project.

Biodiversity	Adaptation	Mitigation	Donor	Sector	Recipient	US$
Significant	Principal	-	Canada	Fuelwood/charcoal	Democratic Republic of the Congo	95,405 (in 2023)

Example 2: Increased climate resilience and well-being of rural communities through improved food security and nutrition, economic empowerment, responsive local government policies and more inclusive and stronger grass-roots organizations. This will be achieved by diversified and increased agriculture production, increased seed security, better livestock management, sustainable management of resources, capacity building of grassroots organizations and policy work at local, national and international level.

Biodiversity	Adaptation	Mitigation	Donor	Sector	Recipient	US$
Significant	Principal	-	Norway	Agricultural development	Malawi	220,494 (in 2023)

Note: Authors' table. Descriptions are shortened. Extracted from OECD CRS (2025b).

ODF targeting NbS which delivers on biodiversity, climate and DLDD

ODF targeting NbS is identified by filtering projects in relevant sectors (e.g. agriculture, forestry and fishing) that are tagged with at least a significant or principal biodiversity Rio marker or with SDGs 14 or 15. Disbursements for these projects are aggregated to total NbS finance in ODF.

A number of projects contribute to multiple targets across Rio Conventions. These transactions are captured in the overlapping sections of Figure 13, which represent NbS actions and investments that simultaneously deliver biodiversity, climate and DLDD benefits. Each transaction identified as NbS is assessed for Rio markers, thematic keywords and SDG tags linked to the Rio Conventions. This method avoids financial double counting by transparent accounting. It explicitly treats overlaps as reflecting multiple benefits from the same investment. Every NbS-aligned transaction is first attributed to biodiversity finance (as a minimum condition). Additional attributions are made to climate and/or DLDD to show the extent to which NbS finance aligns with individual or multiple Rio Convention goals.

Table A13: Public finance to NbS: Debt-for-nature swaps

Source dataset(s): Bloomberg Terminal 2025
Approach: Aggregation and analysis of DNS transactions from 2021–2024, including restructured debt, new debt issuance and conservation finance unlocked. Data compiled from official deal participants and secondary sources. The methodology involves compiling data on restructured sovereign debt (face value of debt converted), new debt issuance (used to finance the swap) and conservation finance unlocked (funds redirected to environmental projects).
Added value in SFN 2026: This is the first time that DNS is included in SFN. The dataset highlights the scalability of DNS for climate and biodiversity goals. It also demonstrates how DNS can unlock substantial conservation finance in debt-distressed countries and provides a foundation for integrating DNS into broader sustainable finance taxonomies and frameworks. The dataset supports the development of blended finance models by illustrating how public and private capital can be mobilised through DNS.
Changes due to methodological upgrade: This is the first time DNS are included in SFN.
Changes due to new data points: All data points are new.
Units and data granularity: Estimates are in real million 2024 US$ prices. Data includes eight DNS deals across seven countries: Belize, Ecuador, Gabon, El Salvador, the Bahamas, and Barbados (2022 and 2024). Includes annual breakdowns of restructured debt, new debt issuance and conservation funds unlocked.

Private finance to nature-based solutions

Estimation of private NbS finance flows is challenging due to limited data availability on finance flows for categories and instruments, inconsistent definitions and scope and different reporting practices.

Table A14: Private finance to NbS: Sustainable bonds for biodiversity

Source dataset(s): BloombergNEF (2025)
Approach: Use of Bloomberg terminal, selecting corporate bonds and loans by Use of Proceeds: Sustainable Proceeds. Filter ESG project category "biodiversity" to reproduce data used in Biodiversity Finance factbook. Estimates use all listed use of proceeds and divide the total amount issued equally by number of use of proceeds. This represents a more realistic look at financing spent. However, use of proceeds is generally not divided equally, and biodiversity often receives the smallest share. If a US$100 million bond has ten listed UoPs including biodiversity, we have attributed US$10 million to biodiversity. In the absence of actual allocation data, Bloomberg considers this the best approach.
Added value in SFN 2026: Adding private capital investments from a consistent source compared to a selection of asset classes and mechanisms.
Changes due to methodological upgrade: This is the first time the asset class is included.
Changes due to new data points: This is the first time the asset class is included.
Units and data granularity: Estimates are in real million US$ 2024 prices. Data from 2012 to 2025 for corporate bonds and loans. Note: Supranational are government established institutions such as EU and World Bank and are counted as public along with government-related bonds.

Table A15: Private finance to NbS: Private philanthropy

Source dataset(s): OECD Credit Reporting System (CRS) 2025
Approach: Use of lower and upper bounds as in the OECD CRS dataset (ODA) to estimate NbS finance. The key difference with respect to the estimation method of NbS finance in official development finance is the selection of donors. This section includes only private philanthropies. For more information about the calculation of Rio marker shares and their application refer to annex table 13.

Added value in SFN 2026: The application of strict filtering criteria and estimation of lower and upper bounds for NbS finance, as well as use of a dedicated dataset for philanthropic finance for development is an improvement.
Units, data granularity, filters: Estimates are in real million 2024 US$ prices. Data is available from 2015–2022. Donors include private philanthropic institutions. Measure: Total (private grants and "non-grants"). Flow type: Disbursements.

Table A16: Private finance to NbS: Private finance mobilised for official development finance

Source dataset(s): OECD Mobilised private finance for development (2025)
Approach: Use of mid-point estimates of NbS shares calculated in the CRS dataset with the Rio markers were extrapolated to the OECD database for mobilised private finance for development. For more information about the calculation of Rio marker shares and their application refer to annex table 13.
Added value in SFN 2026: Use of mid-point estimates based on Rio marker shares extracted from OECD CRS.
Changes due to methodological upgrade: In SFN 2023, only general environment protection was used for the analysis. The previous method used scaling factors on finance flows to obtain finance for NbS. This analysis considers all NbS-relevant sectors. Hence, the identification of NbS-relevant policy objectives, use of strict filtering and estimation of lower and upper bounds for NbS represents an improvement.
Changes due to new data points (additional year): The updated methodology provides estimates for 2023 and 2022, which extends the time frame covered.
Units and data granularity: Units are in real million 2024 US$ prices from 2015–2023.
Filters: Donors: Official donors (DAC and non-DAC countries), multilateral organizations. Leveraging mechanism: aggregate total. Flow type: Amounts mobilised, amounts mobilised for climate.

Table A17: Private finance to NbS: Voluntary carbon markets

Source dataset(s): Ecosystem Marketplace - State of the Voluntary Carbon Market (2025)

Approach: Transactions in voluntary carbon markets are classified by project category (forestry and land use, waste disposal, transport, agriculture, energy efficiency/fuel switching, renewable energy, chemical processes/industrial manufacturing, household/community devices) by Ecosystem Marketplace. Only Agriculture and Forestry and Land use projects are included in SFN.

Added value in SFN 2026: New data points on the global value of transactions in voluntary carbon markets by project category for 2022 and 2023.

Units and data granularity: Estimates are in real million US$ 2024 prices.

Table A18: Private finance to NbS: Compliance carbon markets

Source dataset(s): Quarterly Carbon Market Reports - Clean Energy Regulator (Australia), New Zealand Environmental Protection Authority (ETS unit movement), Ministerio del Ambiente y Desarrollo Sostenible (Colombia), California Air Resources Board (Cap-and-Trade Program Data Dashboard)

Approach: Based on the national and subnational market overview from Maguire *et al.* (2021), we focus on Australia, California, Colombia and New Zealand as these have sufficient publicly available data and represent a significant share of the market. Values are calculated by multiplying the volume by the unit price adjusted to 2024 prices. Price data is from World Bank's Carbon Pricing Dashboard (n.d.), except for Australia's prices from Clean Energy Regulator (CER) for 2023-24, while 2022 price is from CER market price charts. This methodology is consistently applied across all years.

New Zealand: NZUs may be issued based on entitlements for forestry and industrial removals. For the 2023 cancellation data, although both ETS surrender and voluntary cancellations reflect actual demand, the latter are negligible. Therefore, we focus on net ETS surrender, defined as surrenders minus reimbursements, sourced from the Environmental Protection Authority (2025). Only forestry NZUs are considered.

California Retired volumes issued from California Air Resources Board (n.d.) were extracted, filtering for US forest projects (California Air Resources Board 2011), including reforestation, improved forest management and avoided conversion.

Colombia A caveat is that some of the credits used to comply with Colombia's carbon tax exemption mechanism may also be issued and traded on the voluntary carbon market. This overlap makes it difficult to distinguish between credits retired for tax compliance and those retired for voluntary climate commitments. As a result, some credits may be double-counted, leading to a probable overestimation of the NbS-related finance associated with this mechanism. According to data from the Ministerio del Ambiente y Desarrollo Sostenible (MADS 2024), approximately 77.2 per cent of the credits used for tax exemption originate from forestry, AFOLU and REDD+ projects (considered as contributing to NbS), including afforestation, reforestation, and silvopastoral systems. To estimate the NbS-related credit volume for 2023, we apply this share to the total number of cancellations reported by MADS. This volume is then multiplied by Colombia's carbon tax rate (US$5 per ton) to obtain a valuation proxy in the absence of detailed price data. This figure should be interpreted as a rough upper bound, since the real price paid for such credits is likely lower, otherwise there would be little economic incentive for companies to choose exemption over paying the tax. Moreover, if the exemption mechanism involves significant transaction costs, the effective credit price would have to be even lower to remain financially attractive.

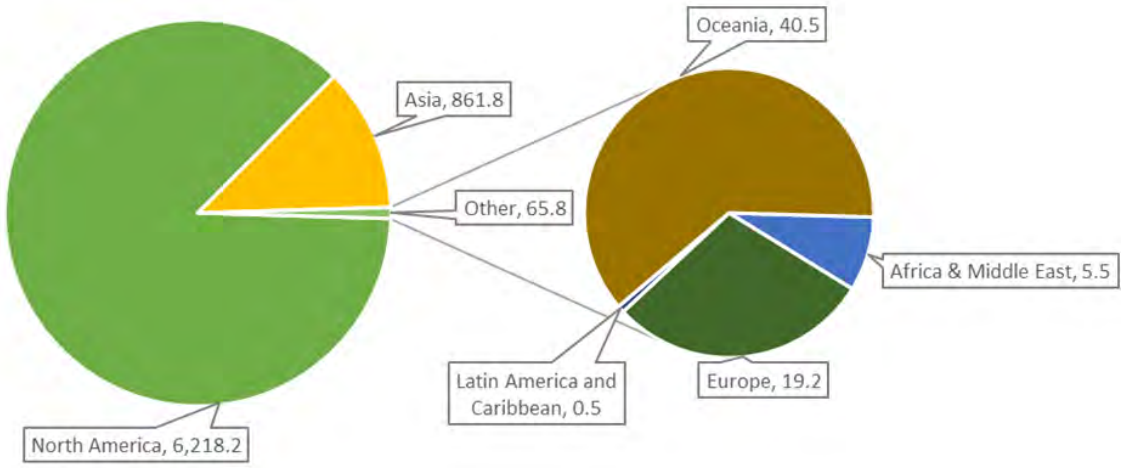
Australia The analysis assumes that NbS-related ACCUs are captured within the broader "vegetation", "savanna fire management" and "agriculture" categories, which include activities such as reforestation, revegetation, improved fire management, agroforestry. This assumption is made due to the lack of more granular data that would permit identification of NbS activities. The price for ACCUs in 2023 is from the Clean Energy Regulator December 2024 report (2025).

Units and data granularity: Units are in real million 2024 prices.

Table A19: Private finance to NbS: Biodiversity offsets
Source data : Bennett *et al.* (2017b). Government of India CAMPA Annual Reports (GoI 2019; GoI 2020; GoI 2021; GoI 2022; GoI 2023). BEA data for US Construction sector growth rate (BEA 2025).
Approach: 2016 values for global private finance for biodiversity offsets was extracted from Bennett *et al.* (2017b) and used for projections. 1. Unites States 2016 estimate is assumed to increase at the same rate as gross value added of the construction sector, following Madsen (2024) identifying that construction is the biggest demand driver; 2. India: CAMPA estimates from annual reports are available for only 2018 to 2022. 2023 and 2024 estimates are assumed to grow at the rate of inflation based on 2022 figures. 3. Other regions: Adjusting Bennet estimates for inflation only due to lack of data.
Added value in SFN 2026: New data points on finance for biodiversity offsets for 2023 and 2024. Estimates are the result of replicating the method in SFN 2023, revised to account for more robust projection assumptions.
Changes due to methodological upgrade: Instead of the low and high growth rate used in SFN 2023, growth assumptions vary by region. In the US, it is the construction sector's growth rate. Indian estimates are reported values from the programme's annual reports. Other regions increase at the rate of inflation.
Changes due to new data points (additional year): Biodiversity offsets amounted to approximately US$7.15 billion in 2023, which represents an increase of 5 per cent since 2022 (US$6.81 billion).
Units and data granularity: Units are in real billion 2024 US$ prices.

The mitigation hierarchy, recognised as the best-practice framework for minimising the impacts of development on biodiversity, prioritises avoiding harm to ecosystems wherever possible, followed by minimising unavoidable damage and finally compensating for residual impacts through biodiversity offsets. This approach supports principles like No Net Loss (NNL) or Net Gain (NG) in biodiversity, ideally ensuring development projects maintain or enhance biodiversity and resilience.

Figure A3: Value of biodiversity offsets by region in 2023



Note: Authors' calculations. Estimates are in real 2024 US$ prices (millions).

Table A20: Private finance to NbS: Payments for ecosystem services (SFN 2023 methodology)
Source dataset(s): OECD (2021). Tracking Economic Instruments and Finance for Biodiversity; Salzman *et al.* (2018). The global status and trends of Payments for Ecosystem Services.
Approach: To estimate the share of private PES, the share of PES that are user-financed and compliance-financed was calculated based on data from Salzman *et al.* (2018). Estimates from OECD (2021) were downscaled by 22 per cent and 44 per cent to derive lower and upper bound estimates.
Added value in SFN 2026: New data points.
Changes due to methodological upgrade: No methodological update was conducted.
Changes due to new data points (additional year): The total value of PES for 2023 was US$4.19 billion, while in 2024 it was nearly US$4.29 billion due to updating the price index.
Units and data granularity: Units are in real billion 2024 prices. Raw data is available for average annual investment 2017–2019 from OECD (2021) and extrapolated using IMF-WEO price index.

Table A21: Private finance to NbS: Certified commodity supply chains
Source dataset(s): : 4C (2023), Breukink *et al.* (2015), FAO (2020; 2022; 2024a; 2024b), FSC (2020; 2021; 2022; 2023), GCP (2021), IDH (2020; 2021a; 2021b), PEFC (2019; 2020; 2021; 2022; 2023a; 2023b), Proterra (2022; 2023), Rainforest Alliance (2021; 2022a; 2022b; 2024a; 2024b), RSPO (2023), Statista (2025), World Bank (2025), WWF (2022).
Approach: Certified commodity finance flows to forestry are calculated based on FSC certification costs incurred by growers, estimated at US$4.16 per hectare in 2015 (Breukink *et al.* 2015). This figure is adjusted for inflation and multiplied by the area under certified forestry practices as reported by PEFC and FSC. A similar methodology was applied by SFN (2023) and Deutz *et al.* (2020), though their approach was based on production volumes. The method for RSPO-certified palm oil is comparable, with certification costs for farmers estimated at US$12.5 per ton of certified palm oil (WWF 2020). This figure is multiplied by the total certified production volume as reported by RSPO. The US$2.27 bn sustainable investment flows to FSC and PEFC certified wood market represent around 1.22 per cent of the total market size of FSC and PEFC certified wood product which was US$186.24 bn in 2023. Using the 2023 palm oil price from World Bank (2025) and factoring in certification cost adjustments, total RSPO-certified production value for 2023 was US$17.4 billion. Finance flows of US$0.27 billion represent 1.5 per cent of total sustainable production value. The average of these two investment shares, 1.4 per cent, is applied across coffee, cocoa and soy, where production volumes are multiplied by average market prices (World Bank 2025). Certified seafood estimate is based on the methodology in SFN (2023) and Deutz *et al.* (2020) with updated data on the value of fisheries and aquaculture from FAO (2024). These estimates use the market value of certified goods as a proxy for the actual contribution of certified commodity markets to nature-positive outcomes.
Added value in SFN 2026: Enhanced updateability of estimates by using publicly available data, e.g. hectares under certification regularly reported by FSC and PEFC and using publicly available commodity price data which is updated annually. RSPO methodology has been revised and is based on more substantive sources. Potential double-counting caused by multiple certifications was minimised.
Changes due to methodological upgrade: Forest products finance flows are lower compared to SFN 2023 due to a change in approach from volume to area, as well as accounting for double certification. Despite the change in approach and using different datasets, the estimates for other certified commodities remain broadly similar.
Changes due to new data points: Certified organic agricultural goods have been excluded here due to lack of reliable data. In SFN 2023, finance flows to this category were estimated at US$2.9 billion.
Units and data granularity: Units are in real billion US$ 2024 prices. Estimates were calculated by certifying agency and aggregated to the commodity level after accounting for multiple certifications.

Investment needs for NbS

The analysis on future investment needs relies on SFN 2023 modelling. Projections for additional investment needs were based on the Model of Agricultural Production and its Impact on the Environment (MAgPIE), a global land use allocation model designed to explore land competition dynamics in the context of carbon policy, complemented with off-model analysis. Estimates from SFN 2023 modelling were revised to US$ 2024 prices. It is assumed that current finance flows are committed to current projects- investment needs represent additional finance needed.

The Rio-aligned scenario assumes that Rio Conventions targets limiting climate change to 1.5 °C, 30by30 and land degradation neutrality by 2030. Further details on modelling assumptions under the Rio-aligned and baseline scenarios, modelling steps, optimisation process and off-model analysis are described in the Technical Annex to SFN 2023. The analysis includes 16 NbS selected based on their mitigation potential, data availability and data quality (Table A22 provides additional detail).

Table A22: NbS types and definitions

NbS category	Description
Reforestation	Conversion from non-forest (less than 25 per cent tree coverage) to forest (more than 25 per cent tree coverage) in previously forested areas
Agroforestry (silvopasture)	A land use system in which trees are combined with livestock.
Agroforestry (silvoarable)	A land use system in which trees are grown with agriculture on the same land.
Restoration of mangroves	Restoration of damaged and degraded global mangrove forests.
Restoration of peatlands	Rewetting of damaged and degraded global peatlands.
Restoration of seagrass	Restoration of damaged and degraded global coastal seagrass meadows.
Restoration of saltmarshes	Restoration of damaged and degraded global coastal saltmarshes.
Grazing – optimal intensity	Grazing optimisation is the offtake rate that leads to maximum forage production (Henderson *et al.* 2015). This prescribes a decrease in stocking rates in areas that are overgrazed and an increase in stocking rates in areas that are under-grazed, with the net result of increased forage offtake and livestock production.
Cover crops	Cultivation of cover crops in fallow periods between main crops. Prevents losses of arable land while regenerating degraded land.
Avoided deforestation	Avoidance of conversion, destruction or degradation of forests, where forests are defined as areas with more than 25 per cent of tree coverage.
Avoided grassland conversion	Avoided conversion of temperate grasslands, tropical savannas and shrublands; the focus is placed on the conversion of grasslands to croplands.
Avoided mangrove conversion	Avoided conversion, destruction or degradation of global mangrove forests.
Avoided seagrass conversion	Avoided conversion, destruction or degradation of global seagrass.
Avoided peatland conversion	Avoided conversion, destruction or degradation of global peatlands.
Protected area	Area closures that can help reduce conversion and degradation of marine and terrestrial ecosystems, including deforestation and forest degradation.

Source: SFN (2023)

Table A23 summarises costs in the land use sector which are captured in the analysis. Costs associated with climate policy include emissions costs aligned with a Paris-compliant carbon pricing trajectory and incentives for negative emissions such as carbon capture. Other costs encompass a broader set of output-related expenditures that increase with policy ambition. These include the rising costs of input factors like energy, labour and eco-friendly inputs, investments in research, development and the adoption of new technologies, and costs related to irrigation and expanding resource-efficient production systems. They also cover downstream costs of processing, transport and trade, which may grow due to the shift toward greener logistics and decentralised networks. Additional costs arise from land conversion activities, including land clearing and preparation for agriculture or ecological restoration, and from forest management practices such as afforestation or reforestation.

Notably, the costs included in this assessment cover quantifiable investment needs in the production of commodities or provision of services related to NbS. Enabling investments required in the wider socioeconomic and institutional environment to scale NbS interventions effectively are not included in these projections.

Table A23: Costs reflected in the integrated assessment modelling (Source: SFN 2023)

Output costs in the investment needs analysis	Description and examples
1. Costs of input factors	Cost of producing food and materials includes labour, energy, physical inputs, non-land capital cost. Examples including higher electricity prices; eco-friendly fertilizer.
2. Investment in technical change and adoption	Includes R&D, adoption and irrigation expansion. Examples include R&D in new technologies to achieve market readiness.
3. Costs of processing, transport and trade	Includes all downstream costs to consumer. Examples include greener logistics, decentralised systems etc.
4. Cost of land conversion	Including land clearing and preparation for agriculture or restoration. Examples include land clearing and preparation.
5. Cost of forest management	Cost associated with forest management. Examples include planting trees or expanding forest.
6. Costs of climate policy	Emissions costs associated with a Paris aligned carbon pricing trajectory; Rewards for negative emissions. Examples include emissions permits, incentives for carbon capture, etc.

The Nature Transition X-Curve

Table A24 provides a comprehensive list of leverage points to support transition to nature positive outcomes organized in eight thematic categories. Colour coding corresponds to the five elements of the Nature Transition X-Curve: phasing in (green), phasing out (red), vision (orange), knowledge (dark blue) and equity and engagement (light blue).

Table A24: List of leverage points

Leverage point / category	Sources
Governance, law and policy reform	
Embed NbS in legal systems.	IUCN 2024a
Using a whole-of-government approach to align biodiversity and climate agendas.	UNEP FI 2023; Finance for Biodiversity Foundation 2024; IUCN 2024a
Reform subsidies harmful to nature.	UNEP 2022a; UNEP FI 2023; UNEP 2024; Hafferty *et al.* 2025
Mandatory standards for disclosure of impacts and dependencies on nature.	Meadows 1999; Barbier *et al.* 2018, Kedward *et al.* 2022; UNEP FI 2023a; WWF 2024
Develop sector-specific nature-positive transition pathways and policy frameworks.	Barbier *et al*. 2018; Kedward *et al.* 2022; WWF 2024
Enhance global cooperation for the protection of shared natural resources and transboundary issues.	WWF 2024
Integrate diverse knowledge systems, including indigenous, ensuring data sovereignty.	IPBES 2024; UNEP FI 2025
Acknowledge all benefits of nature, including for human health.	Bridgewater 2018
Regulation that rewards early adopters of sustainable finance.	WWF 2024
Use fiscal incentives to attract private capital for nature.	UNEP 2023; UNEP FI 2023
Fiscal instruments to disincentivise harmful environmental practices.	UNEP 2022a

Leverage point / category	Sources
Address corruption and insecurity as barriers to nature-positive investment.	WWF 2024
Revise national accounting to include nature ("green GDP").	Oanh 2023; WWF 2024
Strengthen environmental considerations in trade rules and incentives.	WWF 2024
Eliminate trade barriers that punish environmental standards.	WWF 2024
Support workers and businesses affected by the green transition.	WWF 2024
Recognise the rights of local and Indigenous communities.	IPBES 2024; Hafferty *et al.* 2025; UNEP FI 2025
Protect environmental defenders and activists.	IPBES 2024; UNEP FI 2025
Design inclusive trade policies respecting Indigenous and local rights and GESI.	WWF 2024; OECD 2025a; UNEP FI 2025
Ensure the participation of women, youth and smallholder producers in decision-making spaces, following GESI principles.	Wittmer *et al.* 2021; Viña *et al.* 2023
Acknowledge the growing legal and financial liabilities tied to investments that harm climate and nature.	ICJ 2025
Systemic coherence and integration	
Nature-proofing of Official Development Assistance (ODA) by aligning ODA funding with NbS.	UNEP 2022a; Oanh 2023
Support developing countries in designing sustainable development pathways.	Barbier *et al.* 2018; WWF 2024
Align KPIs in industry and finance with the Global Biodiversity Framework (GBF).	WWF 2024
Mainstream nature in the global economic agenda.	UNEP FI 2023; WWF 2024; Hafferty *et al.* 2025
Agree on the goal and definition of a nature-positive economy.	Randrup *et al.* 2020; Kooijman *et al.* 2021; WWF 2024
Align climate, biodiversity, restoration finance and SDG agendas.	WWF 2024
Always consider ecological infrastructure as alternative to and in synergy with grey infrastructure.	Bridgewater 2018; Randrup *et al.* 2020; UNEP 2022a; Mercado *et al.* 2024
Support integrated landscape initiatives.	UNEP 2021
Shifting social norms away from consumerism towards sustainable lifestyles.	IPBES 2024
Adopting regenerative views, structures and practices.	Hebinck *et al.* 2022; IPBES 2024
Changing mindsets and paradigms towards nature-based principles.	Randrup *et al.* 2020; Roggema *et al.* 2022; Cousins 2024; Mercado *et al.* 2024
Finance instruments	
Foster public-private partnerships for blended finance and de-risking.	UNEP FI 2023; UNEP 2024
Promote innovative nature finance like debt-for-nature swaps, green bonds and impact funds.	Singhania *et al.* 2023; UNEP 2023; Finance for Biodiversity Foundation 2024
Increase public investment in nature through green budgeting and procurement.	UNEP 2022a; IUCN 2024a; UNEP 2024; Hafferty *et al.* 2025
Scale up concessional finance, including preferential agricultural loans	UNEP 2021; Oanh 2023
Establish global funding mechanisms for NbS and nature-positive finance.	WWF 2024
Promote financial inclusion through microcredits, micro-savings and digital services.	UNGA 2023
Financial sector alignment	
Require biodiversity impact assessments for investments using credible, nature-inclusive standards.	Singhania *et al.* 2023; UNEP 2023
Reform global financial institutions to empower nature-rich countries.	Oanh 2023; WWF 2024

Leverage point / category	Sources
Address sovereign debt challenges that hinder investments in nature / NbS.	WWF 2024
Mandate finance institutions to divest from nature-negative activities.	UNEP 2022a
Develop verification and certification for nature-related investments.	Edmans *et al.* 2022; UNEP 2023
Embed nature risks and dependencies in monetary policy and supervision.	UNEP 2023; Finance for Biodiversity Foundation 2024; UNEP 2024
Guide financial institutions to align with biodiversity frameworks.	UNEP 2023
Engagement of financial institutions with clients for supporting the phase out of nature negative finance flows.s	Finance for Biodiversity Foundation 2024
Standards, metrics and data	
Ensure coherent, accessible data for monitoring climate, biodiversity, and well-being.	IUCN 2024a
Create standard metrics and methods to show benefits of NbS and nature-positive investments.	UNEP 2021
Improve data on NbS and nature finance, including gender dimensions.	IUCN 2024b, Hafferty *et al.* 2025
Develop metrics of societal success that include social, economic, cultural and environmental goals.	Randrup *et al.* 2020; IPBES 2024
Agree globally on indicators to track nature-positive progress.	IUCN 2024a
Adopt science-based targets to reduce risks and generate nature-positive impacts.	UNEP FI 2023; Finance for Biodiversity Foundation 2024
Standardise frameworks to capture nature's multi-dimensional value.	Randrup *et al.* 2020; UNEP 2023
Business and markets	
Establish state-owned enterprises to drive nature-positive and NbS investments.	UNEP 2022a
Create high-integrity markets for nature and NbS.	Barbier *et al.* 2018; UNEP 2022a; UNEP FI 2023
Develop insurance products for nature-related risks and opportunities.	WWF 2024
Provide seed funding at the right scale for nature-positive businesses.	UNEP 2024b
Quantify and disclose corporate biodiversity impacts and dependencies.	UNEP 2021; Edmans *et al.* 2022; UNEP 2024b
Ensure carbon markets meet strong environmental and social standards.	Barbier *et al.* 2020; UNEP 2021
Develop markets for alternatives to extractive activities.	Oanh 2023; WWF 2024
Assess socio-political risks and benefits of nature market approaches.	Kedward *et al.* 2022
Fund experimental spaces for nature-positive innovation.	Cousins 2024
Support nature-based enterprises centred on conservation.	Kooijman *et al.* 2021
Improve funding and market access for women and marginalised groups.	UNEP 2022
Investing in women and Indigenous peoples-led efforts, sectors and collaborations.	IUCN 2024b
Education and capacity building	
Integrate human-nature connectedness into education, health, planning and art.	Roggema *et al.* 2022; IPBES 2024; Hafferty *et al.* 2025
Build board level leadership for nature.	UNEP 2024b
Promote sustainable finance literacy for informed investment and business decisions.	Samdani 2024
Build capacity and simplify finance access for local and Indigenous communities.	UNEP FI 2025

Leverage point / category	Sources
Support students in becoming ecological leaders.	Roggema *et al.* 2022
Expand financial education for underserved populations.	Oanh 2023
Understand both co-benefits and risks of NbS.	Osaka *et al.* 2021; Kedward *et al.* 2022; UNEP 2023
Highlight cost-effectiveness and revenue potential of conservation.	Kooijman *et al.* 2021; UNEP 2023
Explore blockchain and artificial intelligence roles in NbS and nature goals.	Singhania *et al.* 2023
Recognise the connection between poverty eradication and biodiversity conservation.	Ancrenaz *et al.* 2007
Equity, rights and participation	
Understand and compensate for the local (social) costs of investments, including for youth, women and marginalised groups.	Bidaud *et al.* 2018; IUCN 2024b
Use participatory methods like co-creation and citizen science.	IPBES 2024; Hafferty *et al.* 2025
Ensure nature finance follows rights-based, high-integrity standards.	UNEP FI 2025
Create fair models to share assets and benefits with IPs and LCs.	Bidaud *et al.* 2018; UNEP 2023; UNEP FI 2025
Acknowledge and address power inequalities.	Hafferty *et al.* 2025
Strengthen local democracy and community control over land use.	Hafferty *et al.* 2025
Empower women as agents of change leveraging their unique knowledge to improve environmental, health and socioeconomic outcomes.	IUCN 2024b; OECD 2024c
Recognise the rights of nature and the rights of Mother Earth as stakeholder.	IPBES 2024

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