



NOVEMBER 2025

MARKETING
COMMUNICATION

Eating away our future?

**The links between agriculture,
deforestation, and biodiversity –
and the impact for investors**



Marie Niemczyk

Head of ESG Client
Portfolio Management



Benjamin Manent-Manent

ESG Client Portfolio
Manager

Deforestation and biodiversity loss are accelerating, creating material financial risks for companies and investors. Global supply chains remain major contributors, while regulatory pressure continues to tighten. The EU Deforestation Regulation (EUDR) exemplifies this shift toward mandatory transparency, even if its delayed implementation highlights the complexity of transforming global value chains.

For investors, nature has become a source of double materiality: companies impact ecosystems, and ecosystem decline increasingly affects

corporate performance through supply disruptions, higher costs and reputational exposure.

Because biodiversity is inherently local, assessing these risks requires geographically precise analysis and a deeper understanding of how corporate activities interact with ecosystems on the ground.

As regulation evolves and expectations rise, investors will need robust analytical frameworks, targeted engagement, and proactive risk management to navigate this new landscape and support a more sustainable economic transition.

Going, Going, Gone: biodiversity loss, causes and consequences for investors

Biodiversity loss: an investment matter, too

Biodiversity loss is one of the greatest systemic risks for our economies and societies, with *direct financial materiality for investors*¹. Biodiversity is not only a natural heritage, it underpins half of global GDP — 55 trillion dollars — through the ecosystem services it provides. Pollination, soil fertility, climate regulation, access to clean water, and protection against natural disasters are all reliant on maintaining biodiversity.

Many key sectors of our economy rely on healthy ecosystems. Chemicals, pharmaceuticals, energy, textiles, and agriculture and food —80% of crops depend on pollinators.

Over time we have reduced the diversity of crops we produce. Today, an enormous 66% of global food production consists of only nine cultivated species, revealing a structural fragility in our economic systems. Such a concentration not only reduces the overall biodiversity on which the pollinators and others depend, the lack of diversity makes our food systems particularly exposed to climate shocks, diseases or ecological imbalances. Our agricultural systems and the associated biodiversity loss can turn into an economic shock, or famine.



Land-use change, including deforestation and agricultural expansion, has had the largest relative negative impact on nature since 1970.

IPBES, 2019

Causes of biodiversity loss: the roles of deforestation and agriculture

The pace of this erosion is accelerating. According to the latest global assessment by IPBES², up to one million animal and plant species are now threatened with extinction, many of which could

disappear in the coming decades. This extinction rate is “at least tens to hundreds of times higher than the average over the past 10 million years.”³

1 – United Nations IPBES, IMF – [Embedded in Nature: Nature-Related Economic and Financial Risks and Policy Considerations](#)

2 – IPBES is the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, supported by secretariat services from the UNEP (United Nations Environment Programme). It can be viewed as the biodiversity equivalent of the IPCC for climate (Intergovernmental Panel on Climate Change).

3 – Ibid

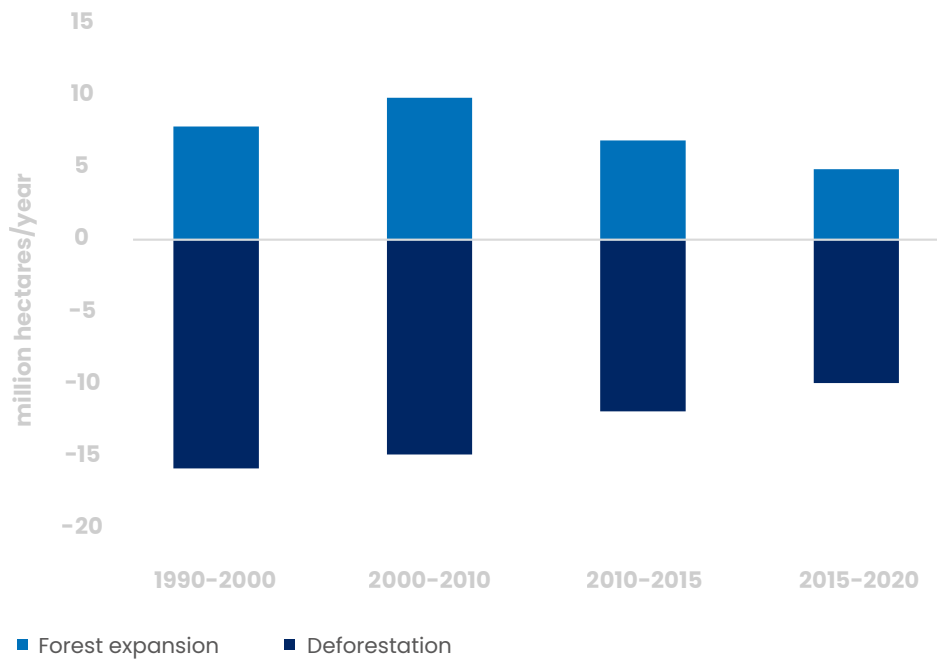
Among the main direct drivers of biodiversity decline, land-use change leads the list – particularly the conversion of natural forests to agricultural or grazing land.

“Land-use change, including deforestation and agricultural expansion, has had the largest relative negative impact on nature since 1970.” The Food and Agriculture Organization of the United Nations (FAO) estimates that agricultural expansion was

responsible for about 90% of global deforestation.

Far from restoring, net deforestation continues. Recent trends in forest dynamics illustrate this. While reforestation and restoration efforts are progressing, they remain far from sufficient compared to the pace of deforestation. Between 1990 and 2020, annual losses of natural forests consistently exceeded gains from forest expansion, as can be seen in Figure 1.

Figure 1: Global forest expansion and deforestation



Source: FAO, 2020

Deforestation results predominantly from a handful of major agricultural supply chains. Between 2001 and 2015, cattle, palm oil and soy alone accounted for the majority of global deforestation. This

highlights the disproportionate effect of a few agricultural commodities, in particular these cattle, palm oil and soy products.

4 - IPBES, 2019, [The global assessment report on Biodiversity and Ecosystem Services, 2019](#). Accessed 10 November, 2025.

Figure 2: Forest displacement (selected commodities)

Commodity	Deforestation (2001–15, Mha)
Cattle (pasture as a land use)	45.1
Oil Palm	10.5 (of which 6.2 were direct)
Soy	8.2 (of which 3.9 were direct)
Cocoa	2.3
Plantation rubber	2.1
Coffee	1.9
Plantation wood fiber	1.8

Source: Global Forest Watch, World Resources Institute, 2024

Beyond its ecological impact, deforestation is a systemic issue with far-reaching economic, social, and environmental consequences. It fuels climate change (accounting for nearly one-quarter of all

greenhouse gas emissions linked to land use), exacerbates biodiversity loss, and ultimately undermines the ecosystem services on which the global economy relies.



Multiple stakeholders, multiple responsibilities

What is being done? By whom? Who else needs to act?

Limited corporate initiatives

Despite their significant exposure to deforestation, many producers operating in the beef, rubber, timber, soy, palm oil, cocoa or coffee sectors have still not adopted clear anti-deforestation policies.

International initiatives: mainly voluntary in nature

Voluntary commitments by companies and states, such as the 2014 New York Declaration on Forests or the Glasgow Declaration at COP26, have been insufficient. Limited by uneven participation, the absence of binding mechanisms, and a lack of supply-chain transparency, the compliance costs have instead fallen largely on producers.

Companies and governments have no clear economic incentives, and face no sanctions for non-compliance.

In 2020, the UN acknowledged this collective failure. None of the twenty Aichi Biodiversity Targets set in 2010 were fully met by the 2020 target, highlighting the need for a legally binding regulatory framework.



A North–South issue?

Deforestation is also a symptom of a geographic imbalance between producing and consuming regions. While forest loss is concentrated in the tropical regions of South America, Africa and Southeast Asia, it largely responds to growing demand from elsewhere – in particular developed countries. High-impact agricultural commodities are mostly produced in the South but consumed in the North, making deforestation a matter of global governance as much as a local problem.

Indeed, these commodities represent enormous imports by developed markets, notably the European Union, which depends on foreign ecosystems for 60% of its food consumption needs. As of today, the EU imports 30–40% of the food consumed on its territory⁵. The EU thus imports about 16% of global deforestation, making it the second-largest net importer of deforestation after China.

The European diet: hungry for imported deforestation

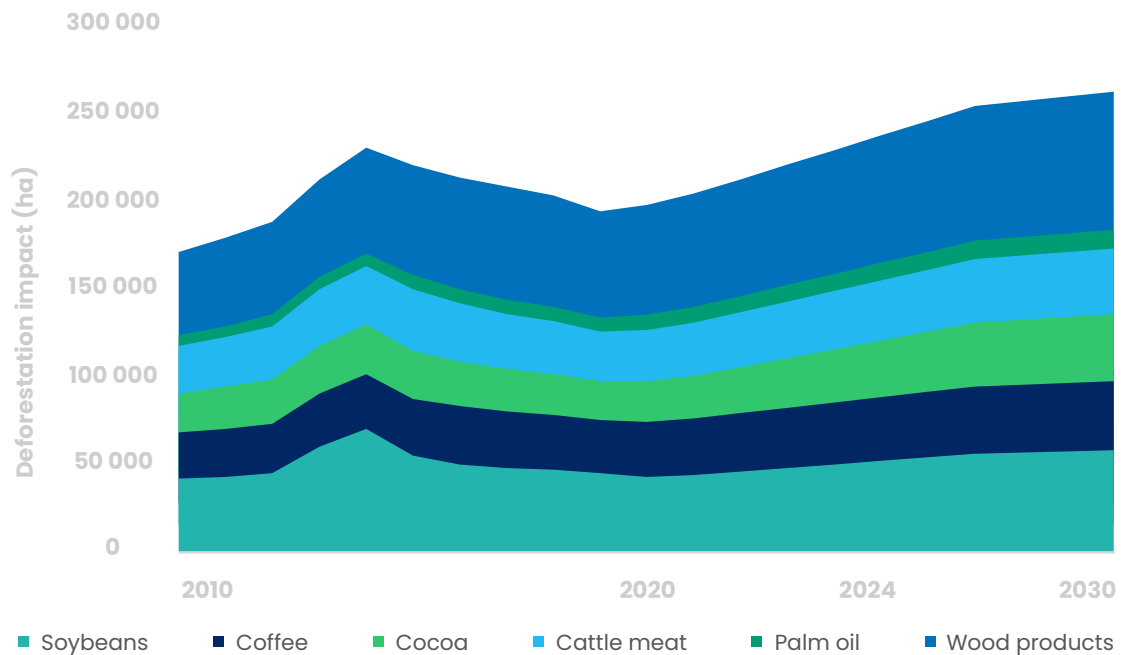
European consumption of agricultural products such as cocoa, soy, palm oil, coffee, beef and wood is among the main factors driving deforestation. Imports of these products often flow from value chains with limited traceability but high environmental and social impact.

Figure 4 illustrates how this footprint has evolved since 2009, as well as projections to 2030.



⁵ – But as some of the domestically-produced food includes imported ingredients or feedstuffs for livestock, the 30–40% imports affect a total of 60% of the consumption.

Figure 4: Deforestation embedded in key EU commodities imports



Source: European Commission, Impact Assessment, 2021

Against this backdrop of accelerated ecosystem decline, the European Union has decided to integrate biodiversity protection into its regulation.

The EUDR (EU deforestation Regulation), or Regulation (EU) 2023/1115, aims to break the link between European consumption and global deforestation. Adopted on 31 May 2023, it requires companies operating in the EU to provide full transparency to prove their products do not come from land which was deforested after 31 December 2020. It was originally scheduled to come into effect in 2025 and 2026.

This regulation is part of the European Green Deal, the 2030 Biodiversity Strategy and the EU's climate-neutrality agenda by 2050.

EUDR: responding to the urgency of deforestation

The EUDR marks a notable turning point in the integration of environmental issues into market regulation. Unlike voluntary approaches or private labels, this regulation establishes a legally binding framework with sanctions and extraterritorial reach, responding to the global deforestation problem.

Once the regulation is in full effect, any company operating in the EU, whether based in the EU or not,

will come under the regulation for specified products linked to deforestation. This includes both imports and exports.

The targets include seven high-risk commodities: cattle, cocoa, coffee, palm oil, soy, timber and rubber (hevea). It also covers a wide range of derived products such as leather, chocolate, paper, furniture or certain palm-oil-based chemicals.

A due diligence system

To be compliant, each company must implement a due diligence system to demonstrate that, for the products concerned:

- They are not linked to deforestation, ie, they were not produced on land deforested after 31 December 2020
- They were produced legally, in accordance with all laws in force in the country of origin (land rights, labour law, environmental and tax standards, etc.)
- They are traceable, thanks to precise geolocated data on the production plots

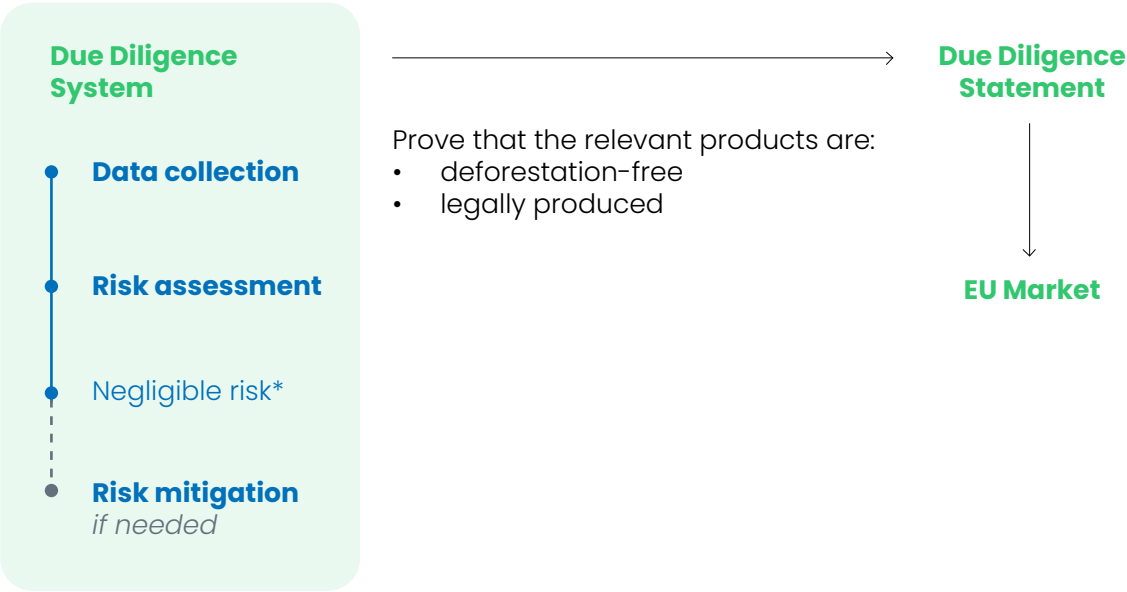
Traceability is central to the regulation. For holdings larger than four hectares, data must be provided as GPS polygons, enabling verification via satellite imagery. For smaller holdings, a single GPS point will suffice for data collection. Companies must also document quantities, production periods and evidence of legal and environmental compliance.

Companies exporting covered products to the European for the first time must carry out a risk assessment, taking into account:

- The level of deforestation in the country of origin
- The complexity and transparency of the supply chain
- The quality of local governance

Unless the risk is negligible, the company is required to implement risk-mitigation measures such as a risk-reduction plan including independent audits, additional documentation, supplier diversification, etc.

Figure 5: Overview of the EUDR Due Diligence Process



Source: International Institute for Sustainable Development, 2025

Country classification and differentiated procedures

The system also provides for differentiation based on the risk level associated with the country of origin. Products from low-risk areas will benefit from lighter due-diligence procedures, while those from high-risk areas will be subject to reinforced obligations and more frequent checks. This classification—based on objective criteria (deforestation rates, quality of governance, forest-protection efforts) will be regularly updated by the European Commission.



Controls and sanctions

At least 9% of companies operating in standard- or high-risk countries will be subject to checks. Competent authorities will have verification tools including on-site inspections, documentary analyses and the use of satellite imagery.

The penalties envisaged are significant and intended to act as a deterrent:

- Withdrawal or destruction of non-compliant products
- Proportionate fines of up to 4% of annual EU turnover
- Confiscation of the products and the proceeds of their sale
- Temporary exclusion from public procurement and EU funding

Implications and limitations

The EUDR seeks to impose transparency along supply chains, and it serves as a direct tool for assessing non-financial risk. Companies unable to prove the legality and traceability of their sourcing face not only financial sanctions but also heightened reputational risk and potential loss of access to the European market.

Implementation will be complex. Traceability and due-diligence obligations entail significant costs, particularly for SMEs or producers in the Global South, who could be weakened by such measures. In addition, the country classification and reliability of the data used are already drawing criticism, such as the risks of circumvention or marginalization.

At the end of September 2025, the European Commission proposed a further one-year postponement of the regulation's entry into force

(after a first postponement already enacted) to give companies and Member States more time to prepare. This decision underscores both the rigour of the scheme and the technical challenges associated with implementation. It also comes amid diplomatic tensions, as several major exporting countries, including Brazil, Indonesia and the United States, are critical of the framework. They perceive it as overly restrictive or even discriminatory toward their agricultural sectors.

Despite the difficulties inherent in its roll-out, **the EUDR is part of a broader tightening of environmental policies that now extends to biodiversity conservation.** This evolution reflects the progressive materialisation of biodiversity-related transition risks, which is becoming a structural financial issue for companies and investors alike.

Biodiversity: a new lens for sustainable investment

Deforestation and biodiversity loss in particular reveal a growing interdependence between sustainability and economic performance. Environmental crises no longer fall solely within the ecological sphere. This is precisely what the principle of double materiality seeks to capture.

This dual reading of sustainability issues encompasses impact materiality on the one hand, which assesses how companies affect the environment and society. On the other, it incorporates financial materiality, which measures

how these environmental issues affect corporate performance and valuation.

This approach, now embedded in European regulatory frameworks such as the CSRD, the SFDR and the forthcoming CS3D⁶, marks a major shift by extending the notion of risk beyond the financial sphere and encompassing ecological and social externalities. The destruction of natural capital is no longer a mere extra-financial issue but a measurable source of economic vulnerability.

From impact materiality to financial materiality

Recent regulatory developments, from stricter anti-deforestation policies to the proliferation of reporting frameworks, illustrate the interconnections between impact and risk. Companies that rely heavily on natural resources or fragile supply chains are increasingly exposed to ecosystem degradation, tighter regulation and growing demands for transparency.

For investors, double materiality has thus become an essential analytical framework. It is no longer just about measuring companies' environmental impacts, but also about assessing how the degradation nature affects investment portfolios.

Despite the global nature of the issue, biodiversity

is by its very nature a local matter. Biodiversity loss is closely tied to the ecological conditions and land uses specific to each area and biome.

Deforestation particularly illustrates this reality. Its impacts vary widely depending on ecosystems, agricultural practices or socio-economic contexts. The same activity can have very different effects depending on whether it takes place in the Amazon, Southeast Asia or Central Europe.

Understanding and measuring these dynamics requires going beyond global indicators by incorporating a geographical reading of risks and dependencies.

6 - EU Corporate Sustainability Reporting Directive, Sustainable Finance Disclosure Regulation, and Corporate Sustainability Due Diligence Directive, respectively.

A materiality-based analysis of biodiversity

Fully integrating double materiality requires tools capable of linking the precise ecological impacts of companies to their financial risks and opportunities, while accounting for their geographical dimensions.

At Candriam, we have designed a proprietary biodiversity model that combines a global footprint approach with a localised geographic analysis. This model assesses both company impacts and dependencies on biodiversity, as well as the precise location of their assets (such as industrial sites, mines, and supply chains) to identify areas of high ecological risk.

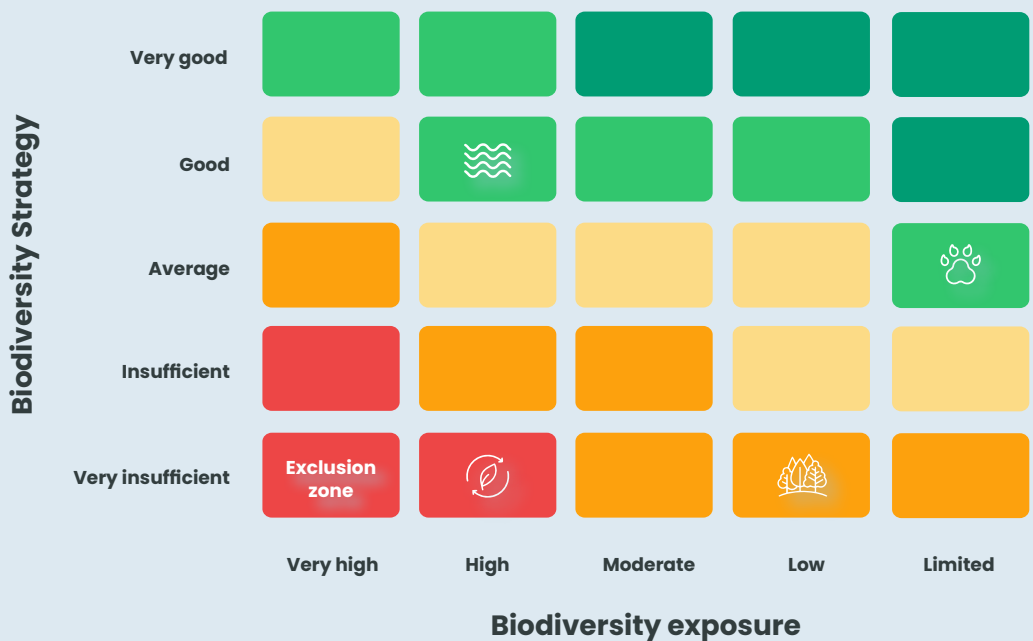
By cross-referencing these data with local environmental indicators such as water-stress areas, threatened species, or presence of

Indigenous populations, we can quantify the pressures exerted on ecosystems and better understand the vulnerability of each company to nature degradation and biodiversity loss.

This tool enables us to concretely integrate the “where” dimension into our investment decisions and to remain faithful to our conviction that a successful ecological transition must also be a just transition – reconciling environmental sustainability with economic fairness.

Based on this framework, we have built a biodiversity matrix to assess whether companies have put in place adequate biodiversity management, given their exposure to biodiversity-related risks and impacts.

Figure 5: Exclusion based on Candriam’s biodiversity matrix



Source: [Candriam Biodiversity Strategy, October 2024](#).

Navigating a complex environment: levers for investors

To protect the value of our investments, ESG analysis must evolve toward a more granular approach to nature-related dependence and impact, drawing on emerging frameworks such as the TNFD, ENCORE and the SBTN⁷. These tools make it possible to identify companies most vulnerable to biodiversity-related risks, as well as those positioning themselves as drivers of sustainable transformation.

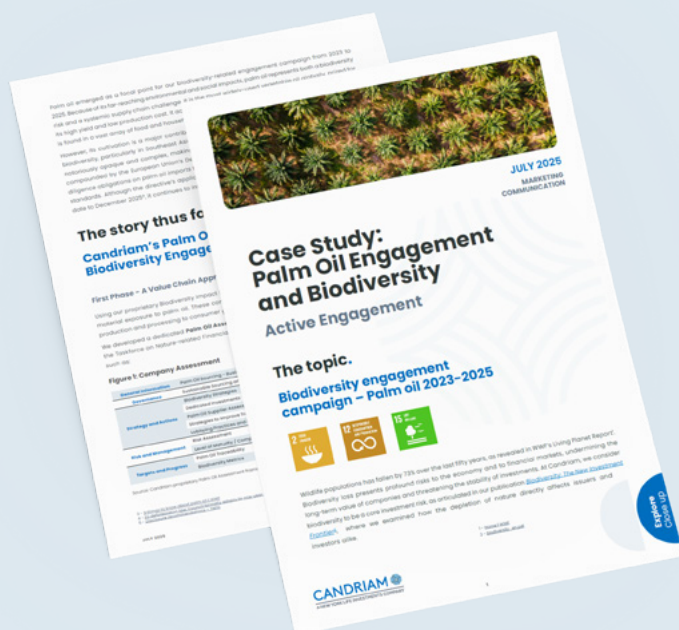
These tools also help identify those most exposed

to transition risk, as well as those that stand out for proactive governance, enhanced traceability or credible impact-reduction commitments.

Shareholder engagement is an essential lever, both resulting from analysis and integral to it. By engaging with companies and other stakeholders on the management of risks related to deforestation, land conversion or supply-chain traceability, investors can contribute to improved sector practices.

Candriam is pursuing an engagement campaign dedicated to palm oil, a sector with is emblematic of tropical deforestation. Our initiative is designed to promote more transparent supply chains and to encourage companies to adopt credible and verifiable

“zero-deforestation” policies, in line with future European regulatory requirements. This approach illustrates how investors can turn a regulatory and reputational risk into a lever for concrete and lasting improvement (and better investment).



**Read our Case Study,
Palm Oil Engagement
and Biodiversity.**

6 – Task Force on Nature-related Financial Disclosures; the Science Based Targets Network; and the TNFD's Exploring Natural Capital Opportunities, Risks, and Exposure

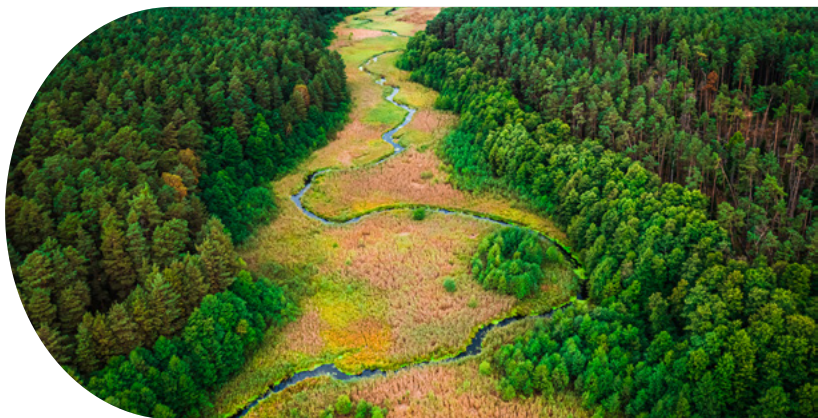
Conclusion: creating value by protecting natural capital

Action to reverse deforestation and preserve biodiversity is no longer just an ecological imperative; it has become a major economic and financial issue. As public policies such as the EUDR establish and improve transparency and traceability requirements, nature is becoming an asset we can protect and integrate into investment decisions.

For investors, this begins a lasting shift. It is no longer the mere exclusion of high-risk activities,

but about identifying those that contribute to preserving natural and economic capital. Integrating double materiality, conducting granular analyses of biodiversity dependencies, and active engagement are all levers for turning a global risk into a sustainable investment opportunity.

By protecting biodiversity, investors protect the very value of the real economy —and, ultimately, their own investments.



Sources

- [More than 75% of the Earth's land is degraded | National Geographic](#)
- [Global Assessment Report on Biodiversity and Ecosystem Services | IPBES secretariat](#)
- [EUDR: European Regulation against deforestation and forest degradation](#)
- [French imports of deforestation-risk commodities between 2012 and 2022 | Data and statistical studies](#)
- [2018.11.14_SNDI_0.pdf](#)
- [20210112_Synthese_Fronts-deforestation-moteurs-et-reponses-dans-un-monde-en-mutation_WWF.pdf](#)
- [The impact of EU consumption on deforestation – Publications Office of the EU](#)
- [The State of the World's Forests 2020](#)
- [The State of Food Security and Nutrition in the World 2020](#)
- [Deforestation Linked to Agriculture | Global Forest Review](#)
- [– SDG Indicators](#)
- [European regulation against deforestation and forest degradation – National strategy to combat imported deforestation](#)
- [The EUDR: objectives and tools | Forest Stewardship Council](#)
- [EUDR: FAQs in French and German – International](#)
- [Regulation on Deforestation-free products – European Commission](#)
- [EU-deforestation-regulation – Key principles and recommendations \(Proforest\)](#)
- [API no. 165 EUDR.pdf](#)
- [Unpacking the European Union Deforestation Regulation: An overview of requirements for operators and SMEs](#)
- [EU law combats forest loss, helps investors identify supply chain risks | PRI blog](#)
- [EU Forest Observatory](#)
- [EUDR case study.pdf](#)



This document is provided for information and educational purposes only and may contain Candriam's opinion and proprietary information.

The opinions, analysis and views expressed in this document are provided for information purposes only, it does not constitute an offer to buy or sell financial instruments, nor does it represent an investment recommendation or confirm any kind of transaction. Although Candriam selects carefully the data and sources within this document, errors or omissions cannot be excluded a priori. Candriam cannot be held liable for any direct or indirect losses as a result of the use of this document. The intellectual property rights of Candriam must be respected at all times, contents of this document may not be reproduced without prior written approval. The present document does not constitute investment research as defined by Article 36, paragraph 1 of the Commission delegated regulation (EU) 2017/565. Candriam stresses that this information has not been prepared in compliance with the legal provisions promoting independent investment research, and that it is not subject to any restriction prohibiting the execution of transactions prior to the dissemination of investment research. This document is not intended to promote and/or offer and/or sell any product or service. The document is also not intended to solicit any request for providing services.