

# Deforestation-free finance: → *a guide on tools and frameworks for financial institutions*



World Business  
Council  
for Sustainable  
Development

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# Executive *Summary*



# Executive Summary

**Keeping forests alive is one of the most effective ways of mitigating climate change, halting biodiversity loss and providing other important ecosystem services that are at the core of a healthy economic and financial system.** At least 11% of global greenhouse gas emissions are due to deforestation. In monetary terms, 55% of global GDP – USD \$58 trillion – depends directly on nature, leaving economies exposed to risks related to nature loss and degradation. Nature- and climate-related risks could lead to a sharp fall in asset prices and increase uncertainty, destabilizing financial systems.

**In 2022 alone, tropical primary forest loss totaled 4.1 million hectares (an area the size of Switzerland) and the tropics lost 10% more forests than in 2021, mostly driven by agricultural expansion.** Yet, from a global perspective, continuing to cut down forests is unnecessary, as there is enough cleared land available to feed a growing population into the future.

**Financial institutions provide most of the capital used for deforesting land through debt or equity.** Despite an increasing awareness of the imperative to stop financing deforestation and a growing number of pledges to eliminate deforestation from portfolios by 2025, too many financial institutions remain exposed to land-use change risks and associated nature- and climate-related risks.

**In the last few years, collective effort by NGOs and finance sector initiatives have largely addressed concerns by financial institutions that data on deforestation is insufficient and difficult to access.** Data quantity, quality and access continue to improve. Despite these improvements, information is dispersed and often hard to link to specific securities, financial actors have limited awareness and it can be challenging to identify the most suitable resources for a specific task such as due diligence screening or a portfolio risk assessment.

**This report serves as a step to fostering widespread and better assessment and disclosure of exposure to deforestation and other land-use change risks in investment and lending portfolios.** It offers an overview of the existing frameworks and tools for assessing and disclosing these risks. There is currently no one tool that covers all needs: different tools are suitable for different tasks and a thorough risk analysis requires the combination of several tools. This report enables financial institutions to quickly identify which tools they can use for specific purposes.

**Increased credit and investment risks linked to the legal compliance of investee companies, escalating climate-related transition and physical risks exacerbated by deforestation and the imperative of meeting net-zero emissions and nature protection commitments emphasize the call for prompt measures in the financial sector.** Along with these, reputational risks, such as greenwashing allegations, and rising stakeholder expectations for climate and nature risk disclosure in the agriculture, forestry and other land use (AFOLU) sector highlight the urgency for immediate action.

**NGO- and financial industry-led initiatives to address deforestation risks started in the early 2000s and have accelerated in the last few years,** including the Investor Network on Climate Risk and Sustainability, the Forest Footprint Disclosure Project, the Investor Initiative for Sustainable Forests, the Food Systems, Land Use and Restoration Impact Program, the Innovative Finance for the Amazon, Cerrado and Chaco project, the Good Food Finance Network, Finance Sector Deforestation Action, Finance for Biodiversity, the Investors Policy Dialogue on Deforestation, Nature Action 100 and the forthcoming Collaborative Stewardship Initiative on Nature.

**Two pivotal frameworks can be used to guide financial institutions on deforestation risk assessment and reduction – The Ceres Investor Guide to Deforestation and Climate Change,** which intertwines deforestation with climate-related risks, **and the Finance Sector Roadmap,** which presents a definitive pathway for financial institutions to eliminate deforestation from their portfolios.

**The report identifies six tools as the most representative in forming the bedrock for assessing deforestation-related risks – Trase, Forest 500, ZSL SPOTT, CDP, ENCORE and Global Forest Watch Pro** – enabling financial institutions to scrutinize the potential ties of clients and portfolios to deforestation. Notably, the fusion of elements from the first four tools is giving birth to Forest IQ, which is still under development.

**Geographic information system (GIS)-based biodiversity mapping and reputational risk tools complement this array of tools to empower institutions to make informed decisions** by identifying high-risk regions, commodities and companies, monitoring malpractice and engaging with clients and prospects.

**The report includes an assessment of the tools' utility in addressing different use cases relevant for banks and investors, coupled with a decision tree that can help users identify the most applicable resources.** Finally, the report looks at two relevant global frameworks for nature – the Taskforce on Nature-related Financial Disclosure and the Global Biodiversity Framework – to identify which tools financial institutions could use at various stages of the process.

Overall, a lack of data, resources or support should no longer be an obstacle for financial institutions to act. Gaps remain, but **the Forest Finance Risk Consortium (FFRC) brings together financial institutions and land-use change monitoring and climate- and nature-related financial risk disclosure experts to develop new tools, guidance and other approaches to end financed deforestation.**



# Introduction



## 01.

# 01. Introduction

## 1.1 Five main reasons why it's time for investors and financial institutions to take action on deforestation

Keeping forests alive is one of the most effective ways of mitigating climate change,<sup>1</sup> halting biodiversity loss and providing other important ecosystem services. Some 55% of global GDP, or USD \$58 trillion, is dependent on nature<sup>2</sup> and therefore exposed to risks relating to nature loss and degradation. Nature- and climate-related risks could lead to a sharp fall in asset prices and an increase in uncertainty, with a destabilizing effect on the financial system.<sup>3</sup> Furthermore, from a global perspective, continuing to cut down forests is unnecessary: there is enough cleared land available to meet the global food requirements for decades to come.<sup>4</sup>

According to the Food and Agriculture Organization of the United Nations (FAO), agricultural expansion drives almost 90% of global deforestation.<sup>5</sup> The main commodities associated with forest conversion and tree loss are beef, soy and palm oil and, to a lesser extent, coffee, cocoa, rubber, timber and pulp.<sup>6</sup> Tropical primary forest loss in 2022 totaled 4.1 million hectares (an area the size of Switzerland) and the tropics lost 10% more forests than in 2021.<sup>7</sup>

Financial institutions provide most of the capital for deforesting land through debt or equity. Despite an increasing awareness of the imperative to stop financing deforestation and a growing number of pledges to eliminate deforestation from portfolios by 2025, too many financial institutions remain exposed to land-use change risks and associated nature- and climate-related risks. In 2022, more than 270 financial institutions disclosed to CDP on how they were responding to deforestation. Only 26% reported that they have a policy framework that includes forest-related requirements that their clients/investees need to meet, compared to 59% with climate-related requirements.<sup>8</sup> Meanwhile, Global Canopy assessed 150 financial institutions financing the 350 most exposed companies and found that only 58 have a commodity-specific policy on deforestation (of which only 16 have a policy that covers all four riskiest commodities).<sup>9</sup>

Furthermore, while nearly two in every three real economy companies disclosing through CDP on deforestation identified forest-related risks, only one in three were able to quantify these risks with potential financial impacts, which totaled USD \$78.6 billion.<sup>10</sup> This figure is only the tip of the iceberg of company – and therefore financial institution – exposure to deforestation risks. Furthermore, while 85% of financial

institutions disclosing through CDP assessed their portfolio exposure to climate-related risks and opportunities, only 20% are assessing the same for deforestation-related exposure.

Financial institutions often encounter challenges in effectively monitoring deforestation-related risks in their investments. Much of this is due to the absence or inconsistent implementation of anti-deforestation practices by producers and a lack of comprehensive due diligence measures in the sourcing practices of trading companies, food processors and other supply chain actors. However, the lack of dedicated resources in financial institutions to perform deforestation risk assessments using existing frameworks and tools exacerbates this. Moreover, some banks are worried about the loss in competitiveness linked to greater scrutiny, as clients may decide to move to less-demanding financiers. Consequently, the approval of deals with insufficiently scrutinized deforestation risks is not uncommon.

There are five key reasons why financial institutions should assess and disclose deforestation risks in their portfolios, set a short-term goal of eliminating financed deforestation, start implementing actions and disclose progress.

### ***Reason #1: Reputational risks are becoming increasingly material***

Financial institutions are sometimes aware that companies use the capital they provide for deforestation. But if they do not have relevant policies in place and there are no legal compliance issues, they often approve the deals. This mostly happens when financiers directly finance producers and where environmental, social and governance (ESG)-related reputational risks have not yet reached a significant level of materiality. In many other cases, financing deforestation is less direct and financial institutions may not be aware that their investments directly or indirectly contribute to the clearing of forests and other harmful land-use change practices. For example, a bank that provides credit to a food company may not be aware that its client sources some ingredients from areas with high deforestation risk.

This exposes financial institutions to allegations of financing deforestation – amplified by the media<sup>11</sup> – in a context where there is increasing pressure from environmental NGOs and civil society, especially in high- and middle-income countries, for deforestation- and conversion-free financing. These allegations can be particularly harmful for those financial institutions that have made net-zero emissions or nature protection commitments, as stakeholders can easily accuse them of greenwashing.



## ***Reason #2: Stakeholder expectations for climate- and nature-related financial disclosure in the forestry, agriculture and land-use sector are on the rise***

Until recently, companies and financial institutions did not widely consider emissions from land-use change and agriculture in climate risk reporting, despite constituting about a quarter of global emissions. This is rapidly changing, mostly due to the publication of carbon accounting standards and net-zero emissions target-setting guidance for the forestry, agriculture and land-use sector.<sup>12</sup> Stakeholders will increasingly expect companies and financial institutions to report climate risks related to land-use change and agriculture according to the standards set by the Taskforce on Climate-related Financial Disclosure (TCFD).<sup>13</sup> Stakeholder expectations for reporting on nature-related risks, following publication of the Taskforce on Nature-related Financial Disclosure (TNFD) guidance,<sup>14</sup> are also on the rise and TNFD disclosure may soon become a necessary condition for accessing investor capital.

## ***Reason #3: Legal compliance issues increase credit & investment risks***

Increasing regulations that aim to prevent deforestation, such as the new European Union (EU) requirements on deforestation-free products,<sup>15</sup> are creating financial risks throughout commodity value chains. The EU regulation does not yet apply to financial institutions, though it will review this in two years' time; but it is already a reason for concern for those who finance or invest in importing companies, as these clients and investees will increasingly face higher compliance costs, risk of fines or risk of losing market access.

Additionally, similar pressures are evident in other regions. In the US, the Forest Act bill<sup>16</sup> restricts certain commodities produced on illegally deforested land from entering the market. This underscores the growing recognition of deforestation's financial impact. Meanwhile, the UK's Environment Act<sup>17</sup> enforces due diligence on businesses, signaling a shift towards increased accountability.

## ***Reason #4: Deforestation exacerbates material climate-related risks***

Emissions from deforestation are a material risk for investors.<sup>18</sup> Firstly, they are exacerbating climate change, threatening global economic and financial stability. Secondly, transition risks will impact a wide range of holdings. For example, climate-related risks are "highly likely to impact the prices of tropical commodity derivatives and the ability of counterparties to fulfill contracts, which may necessitate higher margins to cover potential defaults."<sup>19</sup>

Additionally, a growing number of scientific studies<sup>20</sup> show that increased deforestation and climate change lead to negative impacts in agricultural productivity, which in turn affects supply and pricing, reinforcing a positive feedback loop. Nevertheless, according to a recent report by environmental group Global Witness, banks continue to hold large amounts of debt issued by companies linked to deforestation and biodiversity loss,<sup>21</sup> showing that the connection between deforestation, climate risks and financial stability, despite banks recognizing it, has not yet led to a change in their lending strategies.

## ***Reason #5: Meeting net-zero emission and nature commitments requires an immediate halt to the financing of deforestation***

As of July 2023, the Net-Zero Banking Alliance (NZBA) included 132 banks from 41 countries, representing 41% of global banking assets, or USD \$74 trillion.<sup>22</sup> On the investor side, 85 asset owners representing USD \$11 trillion in assets under management had joined the Net-Zero Asset Owner Alliance (NZAOA).<sup>23</sup> For all financial institutions committing to net-zero emissions, accounting for climate emissions due to deforestation and setting zero-deforestation targets are critical to achieving net-zero goals. The agriculture, forestry and other land use (AFOLU) sector, on average, accounted for 13% to 21% of total global anthropogenic greenhouse gas (GHG) emissions between 2010 and 2019, while the rate of deforestation accounts for 45% of total AFOLU emissions.<sup>24</sup> "Deforestation generates greenhouse gas emissions in the current year as well as reducing carbon storage capacity in future years, causing sectors with high deforestation risk to have an outsized impact on climate change".<sup>25</sup>

Similarly, to be able to reach the targets of the Kunming-Montreal Global Biodiversity Framework (GBF) agreed at the United Nations Biodiversity Conference (COP15), financial institutions should halt deforestation and land conversion from their portfolios to align with:

- Target 1: By 2030 reduce to near zero the loss of areas of high biodiversity importance (land- and sea-use change);
- Goal A: By 2050 maintain, enhance, restore the integrity of all ecosystems.

Beyond the five main reasons described above, it is worth noting that there are other types of business risks linked to deforestation, such as market and technology shift risk.<sup>26</sup>

Engaging with clients on deforestation risk, linking financing conditions to clients' measurable actions on reducing deforestation, and divesting from companies that do not show sufficient progress on zero-deforestation targets can drive companies to reduce real-economy emissions. Simply investing in or financing companies that have made net-zero emissions claims is unlikely to be sufficient, as new analysis<sup>27</sup> shows that over 90% of major forest, land and agriculture companies that have committed to net-zero emissions could be at risk of missing their climate commitments due to a lack of action on deforestation.

## 1.2 Financial institution responses to deforestation risk

Investors have been working to address deforestation risks for many years. The Ceres Investor Network on Climate Risk and Sustainability (INCR), created in 2003, has been at the vanguard of investor action in North America, filing many shareholder resolutions to encourage companies to act on deforestation, from developing commodity-specific policies through to enabling better traceability in their supply chains. The Principles for Responsible Investment (PRI) created an investor working group on sustainable commodities in 2011, which has set out investor expectations of companies working in the palm oil, soybean and cattle value chains. In the same year, Global Canopy launched its Forest Footprint Disclosure Project, which became the basis of CDP's forests work in 2013. In 2017, Ceres and PRI launched the Investor Initiative for Sustainable Forests, in which investors engaged with companies in the cattle and soy value chains to drive action on deforestation. The United Nations Environment Programme Finance Initiative (UNEP FI) has led several initiatives under its Food, Forests and Land program, including the Good Growth Partnership.

Finance sector action has accelerated since 2020, with several new initiatives launched, some focusing specifically on tackling deforestation and some looking more broadly at sustainable food systems and protecting and restoring nature. Key initiatives include the Food Systems, Land Use and Restoration (FOLUR) Impact Program, the Innovative Finance for the Amazon, Cerrado and Chaco (IFACC) project, the Good Food Finance Network (GFFN), Finance Sector Deforestation Action, Finance for Biodiversity, the Investors Policy Dialogue on Deforestation and Nature Action 100, while PRI plans to launch a Collaborative Stewardship Initiative on Nature in late 2023.

FOLUR, led by the World Bank and implemented by several agencies, including FAO and the United Nations Environment Programme (UNEP), consists of a global knowledge platform and 27 country projects and includes finance-

specific components. IFACC, led by The Nature Conservancy, the Tropical Forest Alliance and UNEP, connects and supports financial institutions that promote deforestation- and conversion-free commodity production in these biomes. EAT, the FAIRR Initiative, Food Systems for the Future, UNEP and WBCSD founded the GFFN to develop innovations for sustainable food system finance.

Leading financial institutions launched the Finance Sector Deforestation Action (FSDA) in 2021 at the United Nations Climate Change Conference (COP26) in Glasgow. As of July 2023, 37 financial institutions managing almost USD \$9 trillion support it. Signatories "believe there is an urgent need for sustained engagement and ongoing stewardship with forest-risk sectors and regulators to drive the shift towards sustainable production and consumption with clear social benefits" and have committed to "use best efforts to eliminate forest-risk agricultural commodity-driven deforestation activities at the companies in our investment portfolios and in our financing activities by 2025."<sup>28</sup> FSDA members have the support of the Finance and Deforestation Advisory Group,<sup>29</sup> which focuses on helping signatories to meet their commitment.

The Finance for Biodiversity pledge, which launched in 2020, has the support of 140 financial institutions with almost USD \$20 trillion in assets under management as of July 2023. Signatories have committed to "assess our financing activities and investments for significant positive and negative impacts on biodiversity and identify drivers of its loss" and "set and disclose targets based on the best available science to increase significant positive and reduce significant negative impacts on biodiversity".<sup>30</sup> The Finance for Biodiversity Foundation, set up in March 2021, supports the call to action and collaboration between financial institutions via working groups, as a connecting body for contributing signatories and partner organizations.

The Investors Policy Dialogue on Deforestation (IPDD), established in 2020 and hosted by the Tropical Forest Alliance and supported by PRI, engages with public agencies and industry associations in selected countries on the issue of deforestation. The IPDD "seeks to ensure long-term financial sustainability of investments in the countries they are invested in by promoting sustainable land use and forest management and respect for human rights, with an initial focus on tropical forests and natural vegetation. It will work with key stakeholders to encourage adoption and implementation of regulatory frameworks that ensure protection of such natural assets and human rights." As of December 2022, the IPDD had a membership of 70 financial institutions from 19 countries with approximately USD \$10 trillion in assets under management.<sup>31</sup>

At COP15 in 2022, ten founding investors launched the Nature Action 100 initiative<sup>32</sup> “to mobilize institutional investors to establish a common high-level agenda for engagements and a clear set of expectations to drive greater corporate ambition and action on nature and biodiversity loss”.<sup>33</sup> Modeled on the Climate Action 100 initiative, it aims to set out expectations of companies who have the highest nature-related impacts and to systematically engage with them over time to protect and restore nature. The initiative notes that “depleting natural capital creates significant operational, regulatory, litigation, and reputational risk for investors and businesses alike, and negative economic repercussions globally. Hundreds of billions of global crop outputs are at risk annually from pollinator loss, posing operational risk for companies sourcing agricultural commodities. According to some estimates, tens of billions of dollars in assets could be at risk of stranding over the next 5 to 10 years if companies continue to produce deforestation-linked commodities.”<sup>34</sup>

### 1.3 About WBCSD and the Forest Finance Risk Consortium

The Forest Finance Risk Consortium (FFRC), launched by the U.S. Department of State and hosted by the World Business Council for Sustainable Development (WBCSD), brings together financial institutions (banks, asset managers, investors), land-use change monitoring experts and climate- and nature-related financial risk disclosure professionals. The aim of the FFRC is to foster widespread and better assessment and disclosure of exposure to deforestation and other land-use change risks in investment/lending portfolios, with the ultimate objective to help financial institutions eliminate financed emissions and nature loss driven by deforestation.

Aligned with WBCSD's new Transformation Priority, FFRC aims to enhance corporate performance and accountability, guiding financial institutions and businesses within the rapidly evolving sustainability ecosystem, and fostering greater transparency.

#### *The FFRC vision*

By 2030, financing of deforestation and of conversion of other natural ecosystems is drastically reduced globally, with a significant positive impact on the preservation of nature and carbon sequestration worldwide.

We believe that by joining forces among experts and with a core group of financial institutions, we can help stop financed deforestation before the end of the decade. FFRC members<sup>35</sup> include WBCSD, CDP, Ceres, Climate Advisers, Global Canopy, World Resources Institute (WRI) and the United Nations Environment Programme (UNEP). Other institutions that support FFRC activities are the Climate Champions, the Food and Agriculture Organization of the United Nations (FAO), Global Optimism, Rabobank and the Tropical Forest Alliance.



## 1.4 Objectives and approach of this report

There is no shortage of data, tools and guidance to support financial institutions in assessing and reporting deforestation risks. However, information is diffuse and it is often hard to link it to specific securities, awareness by financial actors is limited and it can be challenging to identify the most suitable resources for a specific task, such as due diligence screening or a portfolio risk assessment.

This landscape assessment builds on Hindsight Consultancy's 2020 *Deforestation tools assessment and gap analysis: How investors can manage deforestation risk*.<sup>36</sup> It serves as a step in achieving the objective of the FFRC to foster widespread and better assessment and disclosure of exposure to deforestation and other land-use change risks in investment and lending portfolios. Its purpose is to offer an overview of the existing frameworks and tools for assessing and disclosing deforestation and land-use change risks and enable financial institutions to quickly identify which tools to use for specific purposes.

We have based the selection of the tools and frameworks presented in this report on extensive research and evaluation, considering their usefulness for financial institutions and following consultation with FFRC members. While the list is not exhaustive, the chosen resources are highly valuable for specific use cases. We also provide an overview of other useful satellite mapping and reputation-monitoring tools.

In this report, we use the word "deforestation" as an umbrella term that includes the Accountability Framework initiative definitions of "deforestation" and "conversion". For example, with "deforestation" we refer to both the clearing of the Amazon forest and the conversion of natural savannahs such as the Cerrado in Brazil.

We have evaluated each tool to identify its suitability for specific purposes, such as initial screening or company risk assessment, and we highlight their possible roles in implementing frameworks such as the Task Force on Nature-related Financial Disclosures (TNFD).

We have conducted technical interviews with the developers of the tools<sup>38</sup> to gain valuable insights into the latest developments and to ensure that the information in this report is reliable, relevant and up to date.



### ***Definitions from the Accountability Framework initiative<sup>37</sup>***

**Deforestation:** The loss of natural forest as a result of: i) Conversion to agriculture or other non-forest land use; ii) conversion to a tree plantation; or iii) severe or sustained degradation.

**Conversion:** Change of a natural ecosystem to another land use or profound change in the natural ecosystem's species composition, structure or function.

# Guidance *Frameworks*



## 02.

## 02. Guidance frameworks

### 2.1 Introduction

In this section, we describe two key guidance frameworks that help financial institutions address deforestation issues. The *Ceres Investor Guide to Deforestation and Climate Change* links deforestation to climate-related risks, while the *Finance Sector Roadmap* sets out a clear pathway for financial institutions to eliminate deforestation from their portfolios. Both frameworks reference and align with the Accountability Framework initiative (AFi), which offers consensus-based guidelines for companies in the agriculture and forestry sectors to achieve ethical supply chains.

Additionally, we include a brief overview of the *Business Handbook on Deforestation and Due Diligence in Agricultural Supply Chains*, which provides an interpretive framework for companies and financial institutions that want to perform due diligence in agricultural supply chains that are material for them.

### 2.2 The Investor Guide to Deforestation and Climate Change

**Website:** [www.ceres.org/resources/reports/investor-guide-deforestation-and-climate-change](http://www.ceres.org/resources/reports/investor-guide-deforestation-and-climate-change)

**Publisher:** Ceres

**Data type:** Guidance

**Accessibility:** Publicly available

#### Overview

Ceres is a non-governmental organization that collaborates with investors and companies to drive progress in the sustainability field and tackle global challenges such as climate change and deforestation. Through stakeholder engagement, science-based research, global initiatives and advocacy efforts, Ceres aims to facilitate positive change and build capacity for sustainable practices across the private sector.

The *Ceres Investor Guide to Deforestation and Climate Change* provides recommendations to financial institutions on addressing deforestation-related risks and associated climate change risks. The guide targets investors and engagement professionals, offering a step-by-step approach to assess their exposure to deforestation risks, engage with companies and prioritize investments. It offers valuable information on the impact of deforestation on climate change, the sectors and commodities linked to deforestation and the role of investors in driving change in this space.

The guide serves as a first go-to source in understanding and navigating the risks associated with deforestation and climate change, and highlights key concepts and terms of the Accountability Framework initiative. It also redirects to other Ceres guidelines and those of external multi-stakeholder initiatives.

#### Scope

##### Purpose

The *Ceres Investor Guide to Deforestation and Climate Change* is a valuable resource that offers high-level guidance to financial institutions on how to address the challenges associated with deforestation-driven climate risks.

The guide aims to achieve the following objectives:

- Educate and inform financial institutions about the risks and opportunities associated with deforestation and its effects on climate change;
- Guide investors in integrating deforestation-related risks into their investment strategies;
- Help investors evaluate and engage with companies to promote climate-friendly and deforestation-free practices;
- Foster collaboration and collective action among investors, companies and other stakeholders.

##### Parts

##### *Part 1: Introduction to Deforestation and Climate Change*

The guide introduces the role of land use in climate change, emphasizing its impact on greenhouse gas emissions and the potential for emissions reductions and carbon sequestration. It also highlights the importance of addressing deforestation and promoting forest restoration to mitigate climate risks.

##### *Part 2: Understanding Deforestation Risks*

This section explores the material risks such as transition risks (operational, market, regulatory, litigation and reputational) and physical risks (operational and market) that companies face due to deforestation. It also highlights the financial materiality of deforestation beyond climate change impacts, including regulatory action, market access, supply chain disruptions and increased production costs. Users can reference information in this section to build the business case for acting on deforestation in their financial portfolios.

### **Part 3: Climate Risks and Opportunities**

This section explores the relationship between deforestation and specific agricultural and forest commodities, as well as the key geographies of deforestation. It highlights the concentration of tropical deforestation in countries like Brazil and Indonesia, the impact of deforestation on climate change and the risks associated with commodities such as beef, leather, palm oil, soybeans, paper and timber, rubber, cocoa and coffee. Users can refer to this section to identify key commodities that drive deforestation and the high-risk countries of production in order to develop a profile of the most exposed clients/holdings in their portfolios.

### **Part 4: Investor Action on Deforestation and Climate Change**

This section provides general guidance on conducting a risk assessment analysis of deforestation-related risks. It emphasizes a step-by-step approach for investors to assess their exposure that begins at the portfolio-level and ultimately narrows focus to priority companies. The guide highlights the importance of urging these companies to adopt robust no-deforestation commitments and engage constructively with suppliers to mitigate deforestation risks.

### **Part 5: Evaluating Corporate Actions and Engaging with Companies**

This section introduces key concepts and emphasizes three essential components of an effective corporate response: ambitious, time-bound greenhouse gas (GHG) reduction targets that include deforestation emissions; a robust no-deforestation policy with strong supply chain implementation; and transparent disclosure of progress on deforestation and climate targets.

### **Part 6: Eliminate GHG Emissions from Commodity-Driven Deforestation**

The last section highlights the evolving expectations and standards related to deforestation and GHG emissions disclosure. It summarizes three key steps that investors can take: actively engaging with portfolio companies; joining collaborative shareholder engagements; and directly engaging with companies to set goals and disclose progress.

## 2.3 Eliminating Commodity-Driven Deforestation: Finance Sector Roadmap

**Website:** [www.guidance.globalcanopy.org/roadmap/](http://www.guidance.globalcanopy.org/roadmap/)

**Publisher:** Global Canopy

**Data type:** Guidance

**Accessibility:** Publicly available

### **Overview**

The *Finance Sector Roadmap* presents a comprehensive framework for financial institutions to tackle commodity-driven deforestation, conversion and associated human rights abuses in their portfolios. With the aim of eliminating these risks by 2025 – or within 4 years of using it – the roadmap offers a clear step-by-step approach that enables financial institutions to take proactive measures and contribute to the preservation of forests and the protection of human rights.

The roadmap brings together existing guidance and tools and Global Canopy developed it based on expertise from Conservation International, Global Canopy, Nature4Climate, the Tropical Forest Alliance, the Accountability Framework initiative (AFI) and the Climate Champions. It is endorsed by and aligns with the AFI, which provides best-practice guidance for companies operating in forest-risk commodity supply chains.

The roadmap is applicable to all types of financial institutions, providing high-level guidance and a well-defined timeline for action. By embracing the roadmap and using these tools, financial institutions can enhance their understanding of deforestation risks, engage with stakeholders, monitor progress and disclose their efforts to eliminate deforestation from their portfolios. This comprehensive approach supports the preservation of forests and biodiversity and contributes to the protection of human rights and the achievement of global sustainability goals.

In order to effectively implement the roadmap, financial institutions can leverage various tools and resources mentioned in the roadmap and covered in this landscape assessment. These tools include the Zoological Society of London (ZSL) Sustainability Policy Transparency Toolkit (SPOTT), Trase, Forest 500, CDP Forests, ENCORE and Global Forest Watch, which provide valuable data, company-focused assessments and guidance on how to account for deforestation- and land-use change-related risks.

## Scope

**Purpose:** The roadmap aims to empower financial institutions to transform their portfolio to be:

### 1. Free from commodity-driven deforestation

This entails putting an end to deforestation as defined under the AFi, i.e., the “loss of natural forest as a result of: i) conversion to agriculture or other non-forest land use; ii) conversion to a tree plantation; or iii) severe and sustained degradation.”<sup>39</sup>

### 2. Free from commodity-driven conversion

This refers to “the change of a natural ecosystem to another land use or profound change in a natural ecosystem’s species composition, structure or function.”<sup>40</sup>

### 3. Free from human rights abuse

The roadmap guides financial institutions to commit to eliminating human rights abuses that frequently precede or occur in conjunction with commodity-driven deforestation and conversion. This includes ensuring the right to free, prior and informed consent (FPIC) for Indigenous Peoples and local communities, respecting the customary rights of these groups to their land, resources and territory, fostering an environment of zero tolerance of threats against environmental and human rights defenders and safeguarding the labor rights of workers engaged in producing commodities that are of high risk for forests. To uphold human dignity, labor rights should be an integral part of engagement and monitoring efforts across supply chains to eradicate abuses comprehensively.

The definitions of the above-mentioned terms are all explained in the appendix of the guidance, building upon the terminology used by the AFi.

## Phases

The roadmap consists of five phases:

1. Understanding and mapping risk
2. Setting an effective policy and managing risk
3. Monitoring and engagement
4. Disclosing
5. Eliminating deforestation

Each phase encompasses specific steps and recommended actions that financial institutions can undertake to mitigate deforestation risks and drive positive change. In addition, the roadmap outlines how financial institutions can go beyond eliminating deforestation and shift towards nature- and people-positive financing.

### Phase 1: Understanding and mapping risks

- **Step A: Serves as the foundation for financial institutions to comprehensively assess the risks associated with commodity-driven deforestation, conversion and human rights abuses in their portfolios.** Financial institutions need to recognize how deforestation can trigger various risks, both transitional and physical, affecting financial returns and fiduciary duty. It also provides supplementary guidance on collecting valuable background information on deforestation and its associated risks.
- **Step B: Involves identifying the profile of clients/holdings with high risk of exposure to deforestation based on their involvement in high-risk agricultural commodities and assessing their impact on natural forests, ecosystems and human rights.** It provides an overview of the main tools available to perform this exercise, divided into country-level data, company risk exposure and performance profiles, geospatial data tools and supplementary guidance.

### Phase 2: Setting an effective policy and managing risk

- **Step A: Involves conducting an in-depth assessment of deforestation, conversion and associated human rights risks.** This assessment builds upon the identification of high-risk clients/holdings in Phase 1. The purpose is to quantify the actual exposure of clients/holdings to these risks and assess their performance in addressing them. The assessment includes factors such as exposure to deforestation, conversion and human rights abuses, verification of compliance with deforestation-free standards, monitoring systems for compliance, risk management policies and grievance mechanisms. Companies can use data from various sources, including direct reporting, certification bodies, investigations, satellite data and third-party data providers, for this assessment. The results of the assessment help categorize clients/holdings into high-, medium- and low-risk categories and prioritize engagement with them in Phase 3. Additionally, the assessment identifies clients/holdings with the highest financial exposure to prioritize engagement efforts. It recommends various datasets, tools and supplementary guidance to inform the assessment.
- **Step B: Focuses on setting an effective policy on deforestation, conversion and associated human rights.** The practical approach of the roadmap supports financial institutions in setting a strong policy with clear visibility of the exposure in their portfolios following the groundwork of mapping and assessing deforestation risks. A strong policy involves making comprehensive and clear commitments with specific and ambitious target dates,



specifying requirements for clients/holdings and key means of operationalizing the policy, and setting a threshold for engagement. The policy should prioritize six key high-risk soft commodities: soy, beef, leather, palm oil, timber and pulp and paper. The policy should cover both direct and indirect financing activities and extend to other high-risk industries. The key actions recommended in this step include setting a strong policy, addressing both legal and illegal deforestation, publishing the policy, acknowledging systemic risks, embedding the policy in existing processes, creating sustainable finance products and extending the policy to other commodities and sectors where relevant. Additionally, financial institutions should communicate clear requirements to clients/holdings to provide a transparent basis for the evaluation of their performance and engagement.

### Phase 3: Monitoring and engagement

- **Step A: Focuses on engaging clients or holdings exposed to deforestation, conversion and human rights risks.** The recommended actions include screening and monitoring all clients/holdings annually for compliance with deforestation policies, assessing the severity of non-compliance on the ground, identifying clients/holdings that require additional engagement, conducting due diligence on new clients/holdings, and engaging non-compliant clients/holdings to discuss non-compliance and developing implementation plans to address it. Financial institutions should actively monitor the progress of clients/holdings on their time-bound plans and remediation activities. The goal is to ensure measurable progress and compliance with deforestation policies across the portfolio.
- **Step B: Involves engaging beyond clients/holdings.** It encourages financial institutions to collaborate with other institutions and initiatives to share knowledge, raise standards and facilitate capacity building. They can engage with ESG data providers to improve data quality and comprehensiveness, streamline due diligence processes and advocate for stronger datasets. It also advises financial institutions to engage with index providers to promote the development of deforestation-free indexes and funds. Advocating for due diligence legislation that encompasses deforestation, conversion and human rights risks is another recommended action. Lastly, financial institutions should advocate for the explicit inclusion of deforestation in climate- or nature-related initiatives or strategies.

## 2.4 OECD- FAO Business Handbook on Deforestation and Due Diligence in Agricultural Supply Chains

**Website:** <https://www.fao.org/documents/card/en/c/cc6595en>

**Publisher:** Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization of the United Nations (FAO)

**Data type:** Guidance

**Accessibility:** Publicly available

### Overview

The recently published *OECD-FAO Business Handbook on Deforestation and Due Diligence in Agricultural Supply Chains* helps companies integrate the risk of deforestation and forest degradation into their corporate due diligence procedures. It follows a five-step approach for which, beyond the sources of information provided in the Handbook itself, some of the tools analyzed in the present report can be used:

#### **STEP 1: Establish policy on deforestation and strong management systems**

Relevant tools: the *Ceres Investor Guide to Deforestation and Climate Change* and the *Finance Sector roadmap* provide guidance on establishing robust policies.

#### **STEP 2: Identify, assess and prioritize deforestation risks in the supply chain**

- Map the supply chain
- Assess the risks of deforestation associated with the products, goods, services, suppliers and geographic sourcing areas
- Look out for "red flags"

Relevant tools: Use Trase to map some supply chains and to assess the risks of deforestation from geographic areas; use corporate-level tools such as CDP and Forest IQ to assess risks from specific companies.

#### **STEP 3: Design and implement a strategy to respond to deforestation**

Relevant tools: the *Ceres Investor Guide to Deforestation and Climate Change* and the *Finance Sector Roadmap* provide guidance on implementing strategies.

**STEP 4: Verify supply chain due diligence of deforestation**

- Track the implementation and effectiveness of due diligence activities
- Incorporate the results of monitoring and verification into the design and functioning of the due diligence system
- Monitor the company's own internal control mechanisms to ensure that they are working as intended.

Relevant tools: Use geographic information system (GIS) monitoring tools such as Global Forest Watch (GFW) Pro to monitor compliance; risk and reputation monitoring tools can flag potential issues. Some corporate level tools, such as CDP and Forest IQ, also look at internal control mechanisms.

**STEP 5: Report on due diligence to address deforestation**

Financial institutions can use all of the tools and frameworks listed to demonstrate due diligence, from pre-capital allocation through post-financing monitoring.



# Anlalysis *of tools*



## 03.

## 03. Analysis of tools

### 3.1 Introduction

We start our analysis of tools by discussing their possible categorizations according to the main needs of financial institutions. Then, we look in depth at six tools financial institutions use most to assess the deforestation-related risks of their clients and portfolios: Trase, Forest 500, ZSL SPOTT, CDP, ENCORE and Global Forest Watch Pro. Global Canopy is combining elements of the first four tools with other sources to create a new tool, Forest IQ, which we briefly discuss in the analysis.

In addition to the analysis of the six tools and Forest IQ, we provide an overview of additional GIS and biodiversity mapping tools and of reputational risk analysis tools. The GIS and biodiversity mapping tools play a crucial role in identifying protected areas and regions with high biodiversity risks and deforestation-related risks and in monitoring specific areas for ongoing deforestation. This can facilitate project finance decisions and engagement with companies operating in sensitive areas. The reputation and risk monitoring tools highlight companies in commodity supply chains associated with malpractice, empowering financial institutions to make more informed decisions on their investments.

No one tool covers all financial institution needs: different tools are suitable for performing different tasks and a thorough risk analysis will require the combination of several tools. Financial institutions should also recognize the need to broaden their scope to encompass comprehensive nature risk analysis. This entails integrating deforestation-specific tools with emerging biodiversity- and other nature-related tools. The TNFD Tools Catalogue contains most of these tools.<sup>41</sup>

Following the detailed analysis of the selected tools, the section dedicated to use cases for financial institutions outlines typical situations where deforestation data and tools prove valuable for investors and banks. It also provides recommendations on selecting pertinent tools for specific purposes.

### 3.2 Categorization of tools

According to a 2020 report by Hindsight Consulting<sup>42</sup> backed by a number of investors, financial institutions broadly require three types of deforestation data for analysis of project or corporate financing: exposure data, impact data and performance assessments. We provide examples at a company level below but these also apply at the project level.

#### *Exposure data*

Before allocating capital, a financial institution will want to understand the reliance of a company's revenues and profitability on commodities that are of high risk for forests. This serves to assess the material risk for the financial institution linked to the company's potential impact on forests. For example, a soy producer is entirely dependent on soy for its revenues and therefore is potentially high risk. A finding that the company is responsible for deforestation might lead to fines and client losses. The company might also be susceptible to changes in legislation or consumer demand because of broader deforestation-related issues, such as the introduction of EU legislation. A downstream company, such as a European supermarket, would have some reliance on commodities that are of high risk for forests in its products and still be vulnerable to broader legislation and reputational issues from its supply chain, but the risks would be less material to its overall profitability.

Sources of exposure data include company reports, CDP and Forest IQ.

#### *Impact data*

Financial institutions will also want to understand the potential impact of a company on commodity-related deforestation. This may be similar to its exposure in many cases – such as the soy producer mentioned above – but in some cases it may be notably different. For example, a cosmetics company that buys significant amounts of palm oil from Indonesia for one of its products has the potential to significantly impact deforestation if it does not have suitable controls on its supply chain, although the product itself may not be especially material to the company's profits.

Sources of data for this would include CDP, ZSL SPOTT, Forest 500 and Trase.

#### *Performance assessments*

Having assessed a company's impact and exposure risks, a financial institution will want to understand how well the company is managing these risks. Assessments broadly cover two categories: how good a company's policies are and how well it actually implements them. Several data providers cover policy assessment but obtaining implementation data is much harder. It is possible to construct proxies for implementation from controversy data providers such as Reprisk and NGOs like Chain Reaction Research and Greenpeace, together with satellite monitoring from providers such as GFW Pro or Satelligence. These allow financial institutions

to monitor accusations of malpractice or non-implementation of policies, although it can be difficult to attribute deforestation to a specific actor even with satellite imagery, as there could be a number of different drivers, including local communities.

There are also possible alternative classifications of tools. According to CDP, for example, and more in line with the TNFD Framework, financial institutions need to understand their portfolios in terms of:

- a. The impacts on forests, meaning exposure to commodities linked to high deforestation risks;
- b. Their dependencies on forests, meaning exposure to companies dependent on healthy local environments;
- c. The risks and opportunities stemming from these impacts and dependencies;
- d. The management response (existing vs. required).

Finally, a specific user (bank or investor) can categorize tools according to the different tasks it needs to perform. We cover this in chapter 4 (Use cases).



### 3.3 Trase

**Website:** <https://www.trase.earth>

**Publisher:** Stockholm Environment Institute (SEI) and Global Canopy

**Data type:** Trade flows and a metric of deforestation exposure of supply chain actors

**Accessibility:** Publicly available

#### Overview

Trase is a data-driven transparency initiative developed by Global Canopy and the Stockholm Environment Institute (SEI) that provides spatial data and analysis on commodity-related deforestation and land-use change. The development of the tool started in 2016.

#### Data points:

The tool aims to map and trace trade flows of deforestation-linked commodities, enabling users to identify the actors involved in each stage of the supply chain, from production municipalities to importing countries, and to trace exports back to their regions of origin by focusing on the trade flows carried through by trading companies.

Trase encompasses a comprehensive range of 13 important commodities, including soy, beef, coffee and palm oil. Its coverage extends to 10 countries closely linked to deforestation, including Brazil, Argentina, Colombia and Indonesia. The tool provides user-friendly visual representations of the data on its website and downloadable data for further analysis.

The Trase *Commodity Deforestation Exposure* metric measures the level of exposure of supply chain actors, such as companies, countries and investors, to deforestation resulting from their sourcing practices. It quantifies this exposure in terms of the estimated area of deforestation (hectares) that a supply chain actor connects to. Trase also provides estimates for the total greenhouse gas emissions associated with commodity deforestation, resulting from the loss of biomass stored in vegetation (gross/net emissions from commodity deforestation). This allows estimating a supply chain actor's Scope 3 emissions linked to its sourcing practices.

#### Target audience:

Trase is accessible to a wide range of stakeholders, including investors, financial institutions, companies, governments, policymakers, NGOs, civil society groups, research institutions and experts.

#### Scope

##### Purpose:

Trase focuses on addressing deforestation and land-use change risks associated with commodity production. It aims to bridge two crucial gaps in understanding:

1. Firstly, determining the origins of internationally traded commodities – taking into account environmental and social risks associated with the trade;

2. Secondly, identifying companies involved in the trade of commodities across different countries and assessing the level of exposure of traders and consumer markets to deforestation and land-use emissions linked to imports of those commodities.

#### Data sources:

Trase obtains its data from publicly available sources, primarily national export data published by governments and customs and shipping data, although certain data sources may require payment or have restricted access. Trase offers a granular level of information by linking individual supply chain actors to specific subnational production regions. While the data is generally reliable, there may be discrepancies and some of it may be outdated, as it updates the data every 1-2 years.

#### Limitations:

While it provides a science-based metric of companies' exposure to deforestation, it cannot definitively prove a company's responsibility for causing deforestation. The coverage of Trase is currently limited to specific countries and commodities, focusing on the part of the supply chain from production municipalities to importing countries. It does not provide data information at the farm level and cannot link producers and downstream companies in the consumer market due to unavailability of data at scale. Furthermore, it is important to note that data updates for Trase have a delay of approximately 1-2 years. This delay is primarily due to the nature of the data and the extensive research involved in the process.

#### Commodities covered:

Beef, chicken, cocoa, coffee, corn, cotton, palm kernel, palm oil, pork, shrimp, soy, sugarcane, wood pulp

#### Countries covered:

**Argentina** (corn, cotton, soy, wood pulp), **Bolivia** (soy), **Brazil** (beef, chicken, cocoa, coffee, corn, cotton, palm kernel, palm oil, pork, soy, sugarcane, wood pulp), **Colombia** (beef, cocoa, coffee, palm kernel, palm oil, shrimp, wood pulp), **Cote d'Ivoire** (cocoa), **Ecuador** (shrimp), **Ghana** (cocoa), **Indonesia** (palm oil, shrimp, wood pulp), **Paraguay** (beef, corn, soy), **Peru** (cocoa, coffee, shrimp).

### Relevance

#### Overview for financial institutions:

The tool enables financial institutions to track the involvement of trading companies in high-risk regions and commodities at a subnational level of granularity, helping them to identify traders who source from low-risk areas and engage with those sourcing from high deforestation-risk regions. Financial institutions could combine this information with further detail from CDP's Forests

Program to understand whether companies are involved in landscape approaches to manage deforestation risk. This approach can enable financial institutions to refine engagement and allocation decisions instead of blanket exclusion of producer countries.

Finally, financial institutions can leverage Trase for impact measurement, quantifying and reporting the positive influence of investments in reducing deforestation.

#### Use cases:

Trase provides data and insights that financial institutions can use for initial due diligence for downstream companies to identify possible links to upstream deforestation. In combination with other company-level information such as corporate policies, financial institutions can also use it for engagement and risk assessment purposes. They could use the *Commodity Deforestation Exposure* metric mentioned above as a reporting metric for TCFD.

## 3.4 Forest 500

**Website:** <https://forest500.org/>

**Publisher:** Global Canopy

**Data type:** Company assessments

**Accessibility:** Publicly available

### Overview

Forest 500 is a tool developed by Global Canopy that assesses and ranks companies and financial institutions based on their commitments and actions to address deforestation risks in global supply chains.

#### Data points:

The Forest 500 tool identifies and assesses the 500 most influential organizations in forest risk supply chains, divided into 350 companies and 150 financial institutions. The tool provides a comprehensive annual report summarizing progress and highlights in targeting deforestation, as well as publicly available Excel-based data downloads for all companies and financial institutions. Forest 500 provides a ranking system from 0 to 100 to track the company commitments and progress assessed against four categories: "Overall Approach", combined with their commodity-specific scores for "Commitment/Policy Strength", "Associated Human Rights" and "Reporting and Implementation".

#### Target audience:

The tool targets a wide range of audiences, such as NGOs, media, policymakers, civil society groups and financial institutions.

## Scope

### Purpose:

Forest 500 assesses and ranks companies based on their commitments and actions to address deforestation risks in global forest-risk commodity supply chains. It serves as a tool to track and encourage transparency, accountability and progress in the corporate sector regarding deforestation-related issues. By evaluating companies annually, Forest 500 aims to provide insights into their performance and encourage positive changes in their policies and practices. The tool seeks to drive sustainable practices, promote responsible sourcing and ultimately contribute to the reduction of deforestation and the protection of forests worldwide. Additionally, Forest 500 aims to inform and assist various stakeholders, including investors, policymakers, civil society organizations and consumers, in making informed decisions and engaging with companies to address deforestation challenges.

### Data Sources:

It assesses companies based on publicly available information from their websites or reporting. The data collection period runs from May to November each year and it makes the assessments based on information available during this period. The assessment methodology is fully transparent and published on the Forest 500 website.

### Limitations:

Global Canopy does not ensure independent verification of the source data and the tool relies on companies' self-disclosed information. However, Global Canopy considers any evidence of activity found in the publicly available information they analyze. Coverage is limited to the most exposed companies and financial institutions in forest-risk commodity supply chains, restricting its use as a screening and assessment tool across the full investment universe. Until now, Forest 500 lacked an alignment process with the companies under assessment. But from 2023, companies and financial institutions will have a period where they can see their assessment and highlight any errors before publication. Overall, Forest 500 is useful in identifying the most significant companies with deforestation exposure in investors' portfolios.

### Commodities covered:

Beef, leather, palm oil, pulp and paper, soy, timber

### Countries covered:

Depends on the organization under analysis, although the focus is mostly on high-risk geographies such as Indonesia and South America

## Relevance

### Primary use for financial institutions:

Financial institutions can use the Forest 500 tool to assess and manage deforestation risks for the most exposed companies in their portfolios. The assessments are a useful independent evaluation of companies and provide quantitative scores that enable financial institutions to compare and analyze these companies based on their level of commitment to addressing deforestation risks.

Forest 500 provides a framework for understanding a company's deforestation-related performance and comparing it to best practice and acts as a foundation for more comprehensive risk assessments.

### Use cases:

Financial institutions can use the Forest 500 universe to identify the highest risk companies in a portfolio, as Global Canopy has chosen the 500 companies specifically for their materiality. It is possible to use the data to highlight the best and worst performing companies in terms of policies and actions and to feed into an overall company risk assessment. Financial institutions can use it for engagement with companies to suggest areas for policy improvement.



## 3.5 ZSL SPOTT

**Website:** [www.spott.org](http://www.spott.org)

**Publisher:** *The Zoological Society of London (ZSL)*

**Data type:** Company assessments

**Accessibility:** Publicly available

### Overview

The Sustainability Policy Transparency Toolkit (SPOTT), developed by the Zoological Society of London (ZSL), provides an independent assessment of companies that operate in industries with high risk of deforestation. Initially devised to address the associated risks in the palm oil industry, it now also covers timber and pulp (tropical forestry) and natural rubber.

#### Data points:

SPOTT evaluates the transparency and content of company disclosures across three main areas: organization, policy, practice. The organization section covers information provided by companies on their operations, assets and management structure. The policy and practice sections assess the policies, commitments and processes that guide a company's operations and practices on the ground. This involves assessing the company's reported actions and initiatives in promoting sustainable practices. SPOTT also compiles negative media reports on companies through the "media monitor" feature. It assesses all companies against a set of indicators that vary depending on the industry. These indicators cover various aspects of sustainability in 10 categories:

- Sustainability policy and leadership;
- Landbank, maps and traceability;
- Certification standards;
- Deforestation and biodiversity;
- High conservation value (HCV) and high carbon stock (HCS) and impact assessments;
- Peat, fire and GHG emissions;
- Water, chemical and pest management;
- Community, land and labor rights;
- Smallholders and suppliers;
- Governance and grievances.

#### Target audience:

SPOTT aims to be accessible and beneficial to a wide range of stakeholders. These include financial institutions, producers, processors and traders involved in the supply chain, as well as consumer goods manufacturers and retailers. It is also relevant for government entities and civil society organizations.

### Scope

#### Purpose:

ZSL SPOTT aims to facilitate constructive industry engagement by conducting transparency assessments of major companies in the palm oil, timber and pulp and natural rubber sectors. It assesses their sustainability policies and transparency practices to encourage increased transparency. By ranking companies and identifying areas for improvement, SPOTT serves as a resource for investors, ESG analysts and supply chain stakeholders to make informed decisions and engage with companies on environmental and social issues. Its media monitor feature allows investors to identify reputational, operational and potential regulatory risks.

#### Data sources and granularity:

ZSL obtains data from publicly accessible channels, such as sustainability and annual reports. It uses a mix of in-house capacity and external consultants to collect data, with regular reviews of assessments to ensure consistent quality. Before publishing the analysis of a company, ZSL gives it a chance to provide feedback and, if requested by the company, engages with it to support improvement in their policies and practices. ZSL aligns with the Accountability Framework initiative's definition of externally verified information and the reporting on the implementation of company commitments has three levels: self-reported, externally verified and verified through certifications. ZSL gives greater importance to information verified by independent entities, particularly through second- and third-party verification processes. While the organization doesn't conduct on-site verification itself, it captures and includes existing verification efforts, including certifications from recognized schemes. As such, companies receive extra recognition for obtaining certification from reputable bodies like the Roundtable on Sustainable Palm Oil (RSPO) for palm oil or the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) for timber, pulp and natural rubber.

In terms of coverage, it assesses 100 companies in the palm oil industry, 100 in timber and pulp and 30 in natural rubber, with a heterogenous mix of producers, processors, traders and manufacturers.

#### Limitations:

One of the major limitations of the tool is the relatively low number of commodities and companies covered. It compensates for this with a very strong level of data granularity. ZSL aims to expand its scope in the natural rubber industry to cover more companies. The assessment process also relies on publicly available corporate information, which may not provide an accurate representation of how well a company implements its policies and commitments.



**Commodities covered:**

Palm oil, timber and pulp (tropical forestry), natural rubber

**Countries covered:**

Company-focused, geographical coverage may vary

**Relevance**

**Primary use for financial institutions:**

Similarly to Forest 500, financial institutions can use the SPOTT tool to assess and manage deforestation risks for the most exposed companies in their portfolios. The assessments are a useful independent evaluation of companies, allowing comparison of company policies and commitments in their sector. SPOTT covers fewer commodities than Forest 500 but is more in-depth and also highlights potential controversies covered by the media. It is also useful in gathering insights on a company's performance over the years as it is possible to download historical data.

**Use cases:**

Financial institutions can use the data to highlight the best and worst performing companies in terms of policies and actions and to feed into an overall company risk assessment. They can also use it for engagement with companies to suggest areas for policy improvement and to identify companies that have been involved in controversies and therefore may be higher risk.



**3.6 CDP Forests**

**Website:** <https://www.cdp.net/en/investor>  
**Annual Global Forests Report:** <https://www.cdp.net/en/research/global-reports/global-forests-report-2023>

**Publisher:** CDP

**Data type:** Company assessments

**Accessibility:** CDP forests disclosures and assigned scores are freely accessible to anyone on the website if companies choose to publicly disclose their response (anyone can create a free login on the website, which grants access to up to 20 disclosures). CDP signatories that sign on to support disclosure requests to companies and pay a subsidized annual membership fee have full access to current and historical datasets on company-reported data and scores via Excel, accessible through a dashboard and Secure File Transfer Protocol.

**Overview**

CDP is an NGO that collects and analyzes environmental data from companies, financial institutions and local governments worldwide. Through a questionnaire-based approach, CDP focuses on climate change, water and deforestation.

CDP's forests work specifically targets companies involved in forest risk commodities and their actions to address associated risks. The questionnaire covers a comprehensive set of datapoints, from deforestation management to supply chain practices, governance and operations. It provides extensive coverage across industries, the value chain (producers, processors, traders, manufacturers, retailers) and regions, making it a highly regarded resource among investors. In 2022, over 1,000 companies disclosed through CDP's forests questionnaire.

CDP produces an annual global forest report based on the disclosed data, presenting key performance metrics and other relevant insights from the pool of companies that disclosed through the questionnaire. Investors can also access individual company reports or portfolio-based reports in Excel spreadsheet format to gain deeper insights into their performance.

### Data points:

The questionnaire follows the Accountability Framework initiative's Core Principles and definitions and aligns with the TCFD principles. By completing the forests questionnaire, companies demonstrate their response to the challenges posed by forest risk commodities. CDP assigns scores that provide an overall evaluation of the information disclosed by companies through the forests questionnaire, per commodity they disclose on. The scoring system follows an alphabetical system, ranging from D as the lowest score to A as the highest, with an F for failure to disclose. Additionally, CDP has developed 15 deforestation management key performance indicators (KPIs), highlighting where companies are taking essential actions and where they need to improve to eliminate deforestation from supply chains, which financial institutions can use to inform investor stewardship and decision-making.

Companies can report against seven forest risk commodities, scoring the first four:

- Cattle products;
- Soy;
- Timber products;
- Palm oil;
- Coffee;
- Rubber.

The main categories of key data requested include:

- **Current state** – Company dependence on forest risk commodities, commodity volumes and land resource use, including deforestation or conversion footprint, impacts on company caused by deforestation;
- **Procedures** – Procedures companies have in place to understand risk exposure and manage issues salient to their sectors, including details on value chain mapping;
- **Risks and opportunities** – Substantive forest-related risks companies have identified, potential impacts of those risks, details of associated response strategies, and operational or market opportunities;
- **Governance** – Company governance structures for forests-related issues at board level and below, and mechanisms, including policies and public commitments;
- **Business strategy** – Company integration of forests-related issues into long-term strategic business plans;
- **Implementation** – Company plans and actions to implement their forest-related policies and commitments, including details on targets, traceability systems, use of certification, compliance mechanisms, supply chain and landscape engagement, and restoration projects;

- **Verification** – Company use of third-party verification for the information they disclose;
- **Barriers and challenges** – Key difficulties companies experience in removing deforestation from their value chains and actions to overcome them.

### Target audience:

CDP's forests work targets companies that wish to demonstrate their commitment to addressing forest-related concerns and respond to the expectations and inquiries of financial institutions and large client companies.

In 2022, CDP launched a questionnaire for financial institutions to disclose against existing CDP's main themes (climate, water, forests). The aim is to foster transparency and provide visibility into the commitments and actions of financial institutions in these areas.

### Scope

#### Purpose:

CDP's forests work serves a dual purpose. Firstly, it allows companies to disclose their progress in addressing deforestation in their operations and supply chains. Secondly, it plays a crucial role in fostering accountability: acting on behalf of more than 740 signatories, CDP sends the questionnaire to high-risk companies involved in activities that contribute to deforestation. This engagement prompts companies to actively participate in the questionnaire process and disclose relevant information to investors. By doing so, it enables a feedback loop that reinforces accountability, as companies have the motivation to take ownership of their impact and adopt better practices.

#### Data source:

The data collected for the assessment comes directly from the participating companies. The level of granularity of the data is highly comprehensive, covering hundreds of data points throughout the assessment process. It is important to note that the data provided by the companies is self-reported. However, in the questionnaire, there is an opportunity for companies to indicate whether an external certification body has verified their data.

#### Limitations:

Companies self-report the data, which means the onus is on companies to report accurately and transparently; they can also confirm which reported data they have had verified and how. Companies could, for example, intentionally omit certain aspects of scope in their disclosures. (For instance, a meat packer could disclose a target to refrain from purchasing cattle from deforested areas but may only consider direct suppliers. The company may not mention targets related to indirect suppliers, as it could negatively impact their overall score.) However, companies disclose information by request from investors

and customers and therefore these groups hold them accountable. While CDP offers broad feedback on how a company has scored and provides supporting materials on disclosure and deforestation management best practices, it is not always able to provide individual disclosure support on specific questions in its questionnaire. The abundance of data can bring challenges in effectively translating it into actionable information for investors. To address this, CDP offers support through the Forest Champions initiative, assisting signatories in interpreting the data and providing additional information to enhance their understanding of their portfolio exposure to deforestation risk and how companies are performing.

### Relevance

#### Primary use for financial institutions:

CDP's work on forests allows financial institutions to conduct an in-depth risk assessment of those companies in their portfolio that disclose to benchmark their performance and track progress over time. The scoring system enables financial institutions to screen and evaluate these companies, considering their performance across different metrics, although it may require further analysis to ensure that disclosures are comparable.

#### Use cases:

Financial institutions can use data either as a standalone source for analysis of key datapoints by financial institutions to assess deforestation risk or with other tools such as SPOTT, Trase and Forest 500 to build up a detailed picture of a company's exposure to deforestation risk and how it is performing. Financial institutions can use CDP scores to engage directly with underperforming companies to address their practices or assess potential risks more thoroughly.

## 3.7 FOREST IQ

**Website:** <https://forest-iq.com/>

**Publisher:** Global Canopy

**Data type:** Company assessments

**Accessibility:** Forthcoming

### Overview

In an important development, Global Canopy is combining elements of Trase, Forest 500, ZSL SPOTT and CDP to create a new tool, Forest IQ. It is doing so based on feedback from financial institutions to address the need for broader coverage of companies and geographical areas. It aims to consolidate data from these sources into a single platform. Set for launch in October 2023, Forest IQ will initially provide information on approximately 2,000 companies. Subsequent updates of the tool will include the addition of financial institutions.

Forest IQ will focus on three core metrics: exposure to deforestation and conversion of natural ecosystems, financial materiality and performance reporting. These metrics offer financial institutions a comprehensive overview of companies' deforestation exposure and performance.



## 3.8 ENCORE

**Website:** <https://encore.naturalcapital.finance/>

**Publisher:** ENCORE Partners (Global Canopy, United Nations Environment Programme Finance Initiative (UNEP FI) and United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC))

**Data type:** Industry risk profile

**Accessibility:** Publicly available

### Overview

ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) is a web-based tool designed to assist financial institutions in understanding nature-related risks and incorporating nature considerations into their decision-making processes. The ENCORE natural capital module helps users identify the dependencies they may have on ecosystem services across various economic sectors and to screen for the potential impacts their investments may have on ecosystem services and natural capital assets.

#### Data points:

The ENCORE natural capital module allows users to access a dashboard where they can retrieve the following information in the form of a flow chart and data:

#### Potential dependencies:

- By selecting the sub-industries of interest and the associated production processes, users can retrieve information on the ecosystem services upon which the given production processes commonly depend. For each dependency, it also displays a materiality rating, ranging from very high to very low. It includes 138 sub-industries from the Global Industry Classification Standard (GICS) and 88 production processes.
- ENCORE covers 21 ecosystem services, which all connect to the natural capital assets that underpin them. This enables users to view which natural capital assets support the production processes or sectors of interest.

#### Potential impacts:

- ENCORE provides insights into the potential impact drivers associated with different sectors and production processes. It provides a materiality rating for each impact driver, ranging from very high to very low.
- The different impact drivers link to drivers of environmental change, which in turn connect to natural capital assets. This allows users to view the impact drivers that the production processes or sectors could potentially cause and what their impact could be on different natural capital assets.

ENCORE allows users to understand how some of the potential impacts associated with a production process or sector could be affecting the dependencies of the same company or another company in an investor's portfolio. It shows how relevant impact drivers may affect which natural capital assets and the impacts these changes could have in turn on which ecosystem services.

ENCORE also offers access to easy-to-use visual representations of spatially resolved data on natural capital assets, drivers of environmental change and impact drivers. Financial institutions can use this to complement the geographically agnostic information on potential dependencies and impacts. This functionality allows users to explore and analyze the locations and regions where the availability and quality of the natural capital assets is at risk.

In addition to the natural capital module described in this summary, ENCORE has a biodiversity module that allows users to explore potential portfolio alignment with global biodiversity goals in the agriculture and mining sectors, using two goal-relevant metrics on potential to reduce species extinction and ecological integrity risk.

#### Target audience:

ENCORE initially had financial institutions as its target audience; however, businesses and regulators are also increasingly using the tool.

### Scope

#### Purpose:

ENCORE is a web-based tool designed to help financial institutions and other users screen, visualize and understand the potential nature-related dependencies and impacts linked to different economic activities. By providing these insights, ENCORE enables users to:

1. Identify potential risks and opportunities;
2. Make informed decisions; and
3. Develop strategies to manage and mitigate their environmental impacts and business risks.

While the tool's primary intention is not for assessing deforestation risks at the company level, it is possible to use it to understand which sub-sectors and production processes may be vulnerable to deforestation-related risks.

#### Data source:

The ENCORE knowledge base draws on information from academic studies and gray literature on potential dependencies and impacts of different economic activities on nature. The data files containing the knowledge base, which are available for download from the website, include references to the sources used to populate the knowledge base.

### Limitations:

ENCORE is a screening tool. It synthesizes a large number of academic studies and gray literature sources to provide information on potential dependencies and impacts associated with given sectors and production processes. It summarizes the information to be relevant for all economies across the world. As a result, the data does not reflect the dependencies and impacts of specific companies or countries. In addition to a high-level screening, financial institutions can use it to inform more detailed analyses or to prioritize the most important dependencies and impacts that a company or investor should analyze further.

As it has broad coverage of potential dependencies and impacts on nature across economic sectors and sub-industries, deforestation and conversion are not the specific focus of the tool and may require further filtering for users that are focusing their assessment on these risks.

### Relevance

#### Primary use for financial institutions:

ENCORE allows financial institutions to scope nature-related risks at a portfolio level and incorporate natural capital considerations into their decision-making processes. It does this by identifying the potential nature-related dependencies and impacts of all sectors and sub-sectors. The spatial data layers in the tool also help identify geographic hotspots where certain natural capital assets are particularly at risk.

#### Use cases:

Financial institutions can use ENCORE as a high-level screening tool of potential dependencies and impacts of different (sub-)sectors. Many financial institutions have used it to create heatmaps showing sectors or production processes that have the highest exposure to nature-related risks and opportunities, including those associated with deforestation. They can also use it to inform a more detailed analysis or to prioritize the most important dependencies and impacts that a company or investor should analyze further.

## 3.9 Global Forest Watch Pro

**Website:** <https://pro.globalforestwatch.org>

**Publisher:** World Resources Institute

**Data type:** Geospatial Data Tool

**Accessibility:** Publicly available – accessibility to GFW Pro behind account request (free)

### Overview

Global Forest Watch Pro (GFW Pro) is an online management application to support reducing deforestation in commodity supply chains, which represents a complementary application to Global Forest Watch (GFW). GFW Pro delivers decision-making analysis at the property, supply shed and portfolio levels. The platform allows users, from commodity field officers to financial Chief Risk Officers, to manage and monitor changes in deforestation risk. The application builds data from the Global Forest Watch Partnership and World Resources Institute's scientific research. Global Forest Watch (GFW) provides free near-real-time monitoring of deforestation worldwide using satellite imagery. The platform offers valuable insights and analysis on forest-related metrics, including forest change, land cover, land use, climate data and biodiversity. Companies can request an account on GFW Pro and access all of the data analyses freely. New additional features such as the application programming interface (API) will be available soon under a subscription fee.

#### Data points:

GFW PRO offers additional functionalities where users can overlay administrative areas, land concessions (such as oil palm and the Roundtable on Sustainable Palm Oil (RSPO)) and protected areas onto the data layers. The "add location" feature allows users to upload their own location-specific data for specific investments or commodity supply chain locations and assess it against the layers.

On GFW Pro and GFW's map and dashboard, users can explore a wide range of data to monitor forest change and related factors at global and regional scales. GFW classifies the data according to 5 categories: forest change, land cover, land use, climate and biodiversity. Data layers that include information on function, resolution, geographic coverage, data sources, date of content, instruction for use and an overview of the provided information accompany each category. Users can overlay some data layers for specific insights relevant to the user.

- **Forest change:** Including global tree cover loss and gain information, near real-time deforestation alerts and active fire alerts. The tool also offers the possibility to subscribe to receive daily notifications on fire alerts and weekly notifications on deforestation on the area of preference.
- **Land cover:** Including data on global tree cover, primary forests, intact forest landscapes and tree plantations. These data layers help in understanding the extent and distribution of different land cover types.
- **Land use:** Including data on concession areas for natural resource extraction or agricultural production. It also provides global boundaries for protected areas and data on land tenure rights, which helps in understanding the human impact on forests.
  - **Protected areas:** Displays legally protected areas according to various designations (e.g., national parks, state reserves, and wildlife reserves) and managed to achieve conservation objectives.
  - **Indigenous and community lands:** The LandMark Indigenous and Community Lands dataset is a consolidation of numerous efforts by local, national and regional groups. Indigenous lands refer to the collectively held and governed lands of Indigenous Peoples (self-recognized).
- **Climate:** Global 30-meter resolution maps of greenhouse gas emissions from tree cover loss, carbon sequestration by forests and the net difference between them; aboveground biomass density in 2000 and soil organic carbon density; and projected carbon sequestration rates in naturally regenerating forests. These layers collectively provide information on historical and projected forest carbon dynamics. These datasets are available for visualization as maps, for download and for analysis on GFW. GFW Pro will include greenhouse gas emissions from deforestation using methods that are compliant with the forthcoming GHG Protocol Land Sector and Removals Guidance.
- **Biodiversity:** Including global biodiversity significance, biodiversity hotspots and endemic bird areas. These data layers help in assessing the importance of forests for biodiversity conservation.

Another feature of the tool allows users to set up deforestation alerts in specific regions to monitor forest or tree cover disturbances in near-real-time. This product does not distinguish between human-caused and other disturbance types. Detected alerts in plantation forests may indicate timber harvesting operations without a conversion to non-forest land use. It uses the term deforestation because these are potential deforestation events and there is potential to further investigate alerts to determine this.

#### Target audience:

The tool targets a wide range of audiences, such as investors, governments, NGOs, media, researchers, bankers, financial institutions, manufacturers and commodity traders.

#### Scope

##### Purpose:

GFW provides an open-access platform that combines satellite imagery, remote sensing data and other sources of information to track forest cover, deforestation and forest degradation in near real-time. The main purposes of GFW are to promote transparency and accountability in forest management, raise awareness about the importance of forests, support evidence-based decision-making and foster collaboration among stakeholders working towards forest conservation. By providing accessible forest-related data, GFW aims to facilitate sustainable forest management, biodiversity protection, climate change mitigation and the well-being of communities dependent on forests.

##### Data source:

GFW offers high-resolution satellite imagery, remote sensing derived data and other datasets from research scientists, civil society organizations and government sources. The developer of the tool evaluates all datasets available on GFW for their relevance to users and quality. Datasets must have public documentation, ideally through a peer review publication, and have high accuracy assessments. Many of the datasets are available at 30-meter resolution and offer information on forest dynamics and other contextual information. The developer updates all datasets according to new data availability. It updates many alert products with new information daily and other datasets are annually or less frequently. GFW makes many datasets available to download for free from its Open Data Portal according to established data sharing agreements with data providers.

##### Limitations:

The platform relies on satellite imagery, which may have limitations in terms of accuracy. Additionally, GFW's data is based on *near-real-time* monitoring and may not capture all deforestation activities or reflect the most current conditions in remote areas. Other limitations inherently link with the nature of the data layers, with some being relatively old. Also, certain data layers might come with incongruencies when overlaid, as the resolution of some might be different from that of others.

Finally, there are important data limitations for each dataset available on GFW. Each has specific definitions and accuracy information which users must consider when using the data for a specific purpose. For example, the forest change data presented on GFW, including indicators like annual

tree cover loss and deforestation alerts, may not explicitly differentiate the quality of forest management (e.g., sustainable or unsustainable), the legality of activities (illegal or legal), or the specific causes (natural or human) of forest change events. Remote sensing derived data can also have additional limitations, such as latent change detection due to cloud cover in the source satellite imagery.

### **Relevance**

#### **Primary use for financial institutions:**

GFW provides data and analysis on deforestation alerts, land-use and biodiversity indicators, and allows financial institutions to monitor deforestation in specific areas associated with portfolio companies or projects.

GFW Pro allows financial institutions to upload their own data and create a personalized portfolio of investment locations. The platform provides tailored screenings based on location type, enabling investors to assess risks and prioritize their investments accordingly. Compliance-related forest insights are available on GFW Pro, facilitating informed decision-making.

#### **Use cases:**

Financial institutions can use GFW Pro to monitor ongoing performance of a company or project to identify deforestation and ensure compliance with the financial institution's policies. They can also use it for TCFD reporting on risk management measures related to deforestation and identifying metrics. They can retrieve potential metrics for TCFD implementation from data layers under the "Climate" category, linked with the forest carbon flux model: forest greenhouse gas emissions, forest carbon removals, forest greenhouse gas net flux. It displays data in metric tons of carbon dioxide per hectare (tCO<sub>2</sub>/ha).



## 3.10 GIS and biodiversity mapping tools

We provide a selection of key geographic information system (GIS) and biodiversity mapping tools below, though there are numerous commercial offerings in this space.

### Satelligence

**Website:** <https://satelligence.com/financial-institution>

**Publisher:** Satelligence

**Data type:** Geospatial data tool

**Accessibility:** Commercial contract needed for full access

### Amazonia in Loco

**Website:** <https://amazoniainloco.org/>

**Publisher:** Igarapé Institute

**Data type:** Geospatial data tool

**Accessibility:** Currently free but a premium service is forthcoming

### Palmoil.io

**Website:** <https://www.palmoil.io/>

**Publisher:** MapHubs

**Data type:** Geospatial data tool

**Accessibility:** Commercial contract needed for full access

### IBAT

**Website:** <https://www.ibat-alliance.org/>

**Publisher:** IBAT Alliance (Birdlife International, Conservation International, International Union for Conservation of Nature (IUCN), United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC))

**Data type:** Geospatial data tool

**Accessibility:** Commercial contract needed for full access

## Overview

### Satelligence

Satelligence combines global satellite data with supply chain linkage data to provide insights on performance of agricultural production and supply chain risks. It offers a web-based app, together with progress reports and a data export facility.

#### Data points:

Satelligence uses European Space Agency (ESA) and NASA optical and radar satellite data from 1984 to the present day (Landsat program, MODIS, Sentinel 1 Radar and Sentinel 2). Its Forest Loss Risk Index (FLRI) incorporates accurate forest and other land cover and deforestation information, enables identification of risks in the entire landscape, and informs where to focus programmatic intervention. It uses an up-to-date database of millions of geolocated farms, concessions, mills, factories, refineries, ownership, group structures, traceability to plantations (TTP) and supplier linkages and can profile supplier risk and performance to the farm or aggregate level (group, district, cooperative).

#### Target audience:

The main target of Satelligence is corporate users but it also has an offering for financial institutions to track the performance of their portfolio. Organizations such as Robeco also use Satelligence.

### Amazonia in Loco

Amazonia in Loco is an online dashboard that aims to help companies with current or potential operations in the Amazon region, investors and public policymakers better understand the local dynamics of the 772 municipalities that make up the Brazilian Legal Amazon. The interactive maps and charts highlight opportunities and challenges facing these cities and draw on 25 public databases to inform over 80 social, economic and environmental indicators. Over time, the Igarapé Institute plans to make the platform a comprehensive research tool with premium features, including an application programming interface (API) to allow direct access to data. In future versions, on-demand assessments will be available for companies that seek to better understand the challenges and opportunities related to a wide range of industries, and to incorporate local contexts into their business strategies, risk analysis, environmental, social and governance (ESG) metrics and socio-environmental impact management.

#### Data points:

The tool uses 19 different sources, including the Brazilian Agricultural Research Corporation (Embrapa), the National Institute for Space Research (INPE) and the Amazon Institute of People and the Environment (Imazon). The web interface aims to facilitate decision-making and encourage responsible and sustainable investment



by companies and financial institutions that already operate in the Amazon or are interested in doing business in the region. The platform allows companies to strengthen their due diligence processes, reduce exposure to risk and avoid exacerbating tensions around land rights and other socio-environmental issues.

**Target audience:**

The tool targets companies, financial institutions and policymakers.

## Palmoil.io

Palmoil.io offers companies and financial institutions the ability to monitor palm oil-related deforestation and supply chain relationships on a monthly basis from plantation to refinery. It combines GIS data with monthly forest alerts and risk insight reports. They also track all grievances and link any that may affect the user's supply chain. The tool updates grievances monthly and automatically files them to the user's dashboard.

**Data points:**

The tool monitors 9,600+ palm oil plots in Indonesia, Malaysia, and 10 in Latin America, together with 2,150+ mills globally.

**Target audience:**

The main target of Palmoil.io is companies in the palm oil supply chain, especially those with EU regulatory obligations but investors could also use it to monitor deforestation and receive grievance alerts.

## IBAT

IBAT is a web-based mapping and reporting tool that provides access to authoritative global biodiversity information. It includes a spatial analysis and reporting functionality to assist in interpreting this information in the context of a company or financial institution's areas of interest. The datasets in IBAT include the WDPA, the World Database of Key Biodiversity Areas (KBAs), the IUCN Red List of Threatened Species spatial ranges, and the global layers for the Species Threat Abatement and Restoration (STAR) metric derived from the IUCN Red List.

**Data points:**

The IUCN Red List of Threatened Species (also known as the IUCN Red List) is a rich compendium of information on threats, ecological requirements and habitats of over 150,000 species and on conservation actions to take to reduce or prevent extinctions.

The WDPA is a joint project between the United Nations Environment Programme (UNEP) and the IUCN, managed by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC). Data for the WDPA comes from international convention secretariats, governments and collaborating NGOs. The WDPA uses the IUCN definition of a protected area as the main criteria for entries included in the database.

Key biodiversity areas (KBAs) are sites contributing significantly to the global persistence of biodiversity, in terrestrial, freshwater and marine ecosystems. BirdLife International manages the World Database of Key Biodiversity Areas on behalf of the KBA Partnership.

The STAR metric measures the contribution that investments can make to reducing global species extinction risk. STAR uses data on the distribution, threats and extinction risk of threatened species derived from the IUCN Red List of Threatened Species for its calculations.

**Target audience:**

A range of actors, from policymakers to financial institutions, use IBAT.

## Relevance

**Use cases for financial institutions:**

Financial institutions can use these tools for several purposes. They can use monitoring tools such as Satelligence, Amazonia in Loco and Palmoil.io to monitor a portfolio of companies or projects for deforestation and grievances. Such tools can help banks and investors engage with companies and ensure that they comply with any conditions or policies the financial institution has, such as a zero-deforestation policy or alignment with human rights best practice. IBAT and similar biodiversity databases can identify protected areas and areas of high biodiversity risk for project finance and for engaging with companies operating in or near these areas. Many financial institutions have policies regarding these areas and require extra due diligence or may refuse to provide financing for projects operating within them. These tools can help ensure companies comply with these internal policies.

## 3.11 Reputation and risk monitoring tools

There are many providers of reports and analysis of deforestation-related activity in commodity supply chains, from commercial organizations through to non-profits such as Greenpeace, Global Witness and WWF. We have selected three representative providers to illustrate the sorts of products available for financial institutions.

### Orbitas

**Website:** <https://orbitas.finance/>

**Publisher:** Orbitas (Climate Advisers)

**Data type:** Reports, analysis and modelling

**Accessibility:** Publicly available

### RepRisk

**Website:** <https://www.reprisk.com/geospatial>

**Publisher:** RepRisk

**Data type:** News and analysis of ESG risks

**Accessibility:** Commercial subscription required

### Chain Reaction Research

**Website:** <https://chainreactionresearch.com/>

**Publisher:** Chain Reaction Research

**Data type:** Research and analysis

**Accessibility:** Publicly available

## Overview

### Orbitas

Orbitas is a research organization that examines climate transition risks for capital providers financing tropical commodities. It uses scenario analysis, consistent with the Task Force on Climate-related Financial Disclosures (TCFD), to assess the transition risks from emerging climate transition risks to investors in tropical commodities and the sustainable opportunities from changing current business practices.

#### Data points:

Orbitas uses economic modelling, land satellite mapping and financial metrics to create scenario analysis.

#### Target audience:

Orbitas targets capital providers and companies operating along tropical commodity supply chains.

### RepRisk

RepRisk's main tool is their ESG Risk Platform, the world's largest database on environmental, social and governance (ESG) and business conduct risks. It allows users to conduct in-depth risk research on companies, infrastructure projects, sectors and countries to identify the industry-specific material ESG risks in line with the Sustainability Accounting Standards Board (SASB) standards, assess ESG risks of companies and projects through RepRisk's Sustainable Development Goal (SDG) risk lens or monitor ESG risks daily via customizable Watchlists and a tailored email Alert Service. It also has a Geospatial Analytics tool that shows the proximity of mining and oil and gas projects to environmentally sensitive sites.

#### Data points:

RepRisk screens, on a daily basis, over 100,000 public sources and stakeholders in 23 languages to systematically identify any company or project associated with an ESG risk incident. Data on environmentally sensitive sites comes from the Integrated Biodiversity Assessment Tool Alliance.

#### Target audience:

RepRisk targets financial institutions with ESG requirements.

## Chain Reaction Research

Chain Reaction Research (CRR) conducts free sustainability risk analysis for financial analysts, credit analysts, commercial bankers, institutional investors, corporations and other stakeholders. It focuses on tropical deforestation-related commodities including palm oil, soy, cattle, coffee, cacao, timber pulp and paper.

### Data points:

CRR provides company profiles for major commodity companies throughout the value chain, as well as reports on commodity supply chains where there is evidence of links to deforestation.

### Target audience:

The main target of CRR is financial institutions but the reports are also relevant to companies.

## Relevance

### Use cases for financial institutions:

Financial institutions can use these research and data providers to monitor on-the-ground performance of companies in commodity supply chains. Used in combination with tools to evaluate company risks and management of these issues (for example Forest 500, CDP or Trase), this can give a good overview of how well a company is dealing with deforestation risks, both in their own operations and in their supply chains.



# Use cases for *financial institutions*



## 04.

## 04. Use cases for financial institutions

In the following tables, we look at common use cases for deforestation data across investors and banks and offer guidance on which data and tools might be relevant for specific uses.

### 4.1 Investors

Investors have unique needs linked to the creation of investment funds, while other tasks are common to banks.

**Table 1: Use cases and relevant tools for investors**

Use Case	Descriptions	Relevant tools
<b>Universe creation</b>	Creating investable universes, such as ESG- or climate-aligned; this could also include exclusion lists for funds	Combination of high-level risk assessment via, e.g., ENCORE, <i>Finance Sector Roadmap</i> (lists of high risk countries/sectors), then company-level assessment such as Forest 500, ZSL SPOTT, CDP
<b>Portfolio analysis</b>	High-level portfolio analysis to identify areas of highest risk by sector and geography and highest risk companies by sector	ENCORE for sectors (and geographies using the spatial data layers), CDP for companies by sector <sup>43</sup>
<b>Investment decisions</b>	In-depth analysis at company level to identify investment opportunities	Forest 500, ZSL SPOTT, CDP, Trase, GFW Pro
<b>Engagement</b>	Covering both issue-driven engagement, e.g., deforestation or net-zero commitments, and company-level engagement, focusing on risks and opportunities	Forest 500, ZSL SPOTT, CDP, Trase, GFW Pro, ENCORE. In addition, multi-stakeholder platforms such as the World Cocoa Foundation in West Africa can be useful for engagement purposes
<b>Meeting reporting obligations and commitments</b>	Including TCFD requirements; reporting on engagement; transition plans and net-zero targets; deforestation commitments; forthcoming TNFD requirements	Company-level data. Monitoring of risk and reputation. GIS tools, GFW Pro, CDP
<b>Product creation</b>	Creating new investable products such as deforestation-free funds or low-deforestation overlays	Corporate-level data such as Forest 500, ZSL SPOTT, CDP, Trase

## 4.2 Banks

Banks generally require deeper due diligence and monitoring relative to investors, while other tasks are performed in a similar way.

**Table 2: Use cases and relevant tools for banks**

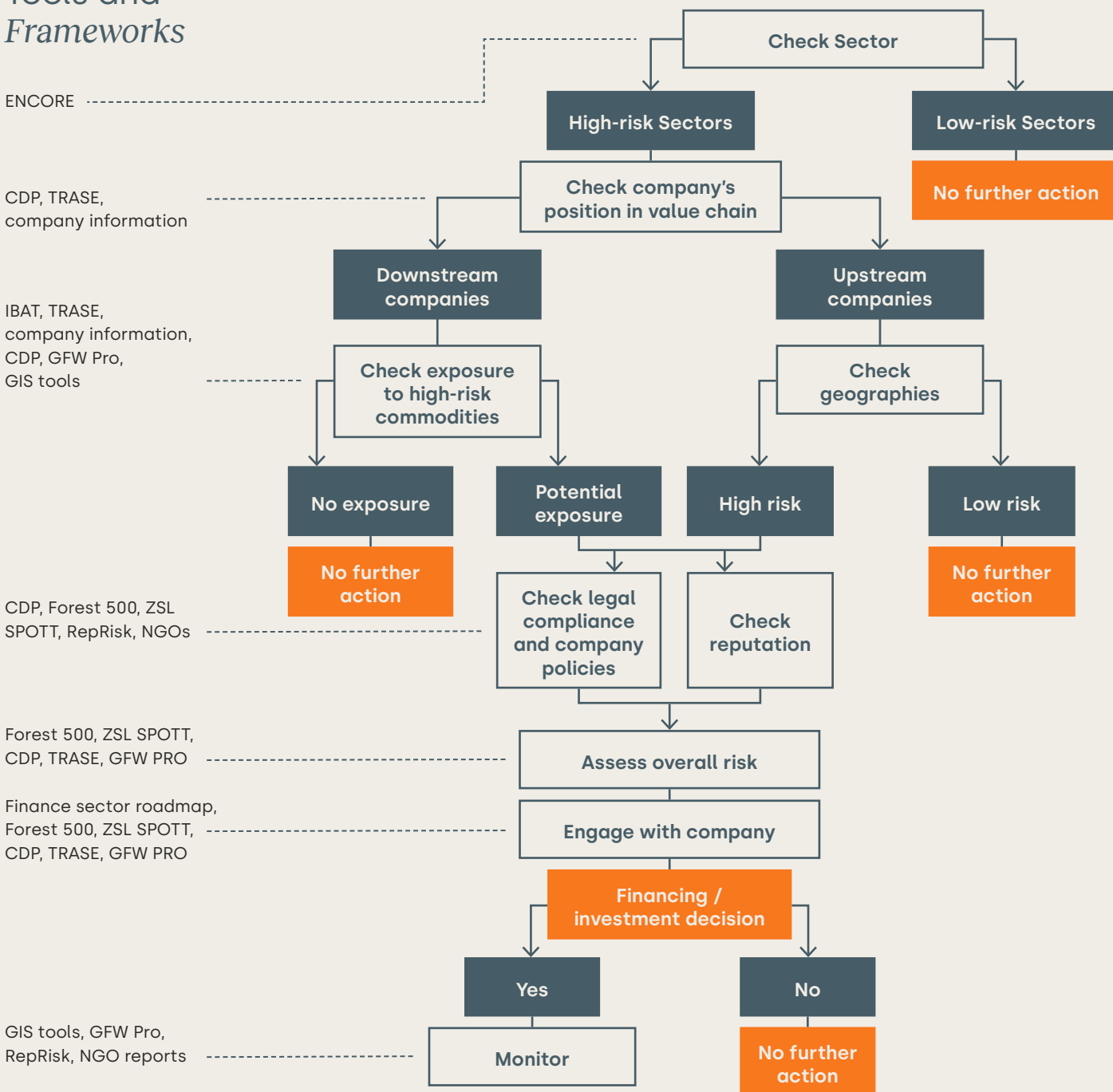
Use Case	Descriptions	Relevant tools
<b>Due diligence and client onboarding</b>	In-depth analysis at company level to assess risks and to ensure alignment with internal policies, e.g., enhanced due diligence for palm oil companies	Corporate-level data such as Forest 500, ZSL SPOTT, CDP, Trase, together with monitoring and reputation tools such as GFW Pro and Reprisk
<b>Portfolio analysis</b>	High-level portfolio analysis to identify areas of highest risk by sector and geography, and highest risk companies by sector	ENCORE, CDP
<b>Lending decisions (including project &amp; corporate finance)</b>	In-depth analysis at project or company level to assess risks and to ensure alignment with internal policies	For corporate finance, corporate-level data such as Forest 500, ZSL SPOTT, CDP, Trase; for project finance, environmental assessments, satellite monitoring and tools such as GFW Pro
<b>Engagement</b>	Ongoing engagement with high-risk companies to ensure compliance and improvements where necessary	Forest 500, ZSL SPOTT, CDP, Trase, GFW Pro; in addition, multi-stakeholder platforms such as the World Cocoa Foundation in West Africa can be useful for engagement purposes
<b>Monitoring</b>	Monitoring of projects, including compliance with lending covenants	GIS tools, GFW Pro, RepRisk
<b>Meeting reporting obligations and commitments</b>	Including TCFD requirements; reporting on engagement; Transition Plans and net-zero targets; deforestation commitments; forthcoming TNFD requirements	Company-level data; monitoring of risk and reputation; GIS tools, GFW Pro, CDP

### 4.3 Example of analysis for a deforestation-free investment or financing portfolio

Navigating the array of available tools and knowing when to apply which tool can seem like a complex process. Figure 1 provides an example of how a financial institution could apply the tools and frameworks at different steps of an analysis for a deforestation-free investment or financing portfolio.

**Figure 1: Decision tree for a deforestation-free investment or financing portfolio**

#### Tools and Frameworks



# Tools supporting the *implementation of global frameworks for nature*



05.



# 05. Tools supporting the implementation of global frameworks for nature

## 5.1 Introduction

Financial institutions are under increasing pressure to align with net-zero emissions and nature-positive pathways and to report on how they are addressing climate- and nature-related risks and opportunities. We have looked at two relevant global frameworks for nature and identified some tools that can facilitate their implementation.

The TNFD LEAP (Locate, Evaluate, Assess and Prepare) process is likely to become the standard for assessing nature-related risks – as TCFD has become for climate – and the framework already has a database of relevant tools for each step.<sup>44</sup> We summarize the relevant tools for financial institutions.

The Global Biodiversity Framework sets out international targets for protecting and restoring nature and a number of financial institutions are looking at how they might align with these targets. We use UNEP FI's guide for financial institutions as a basis for highlighting where and how financial institutions might use tools.

## 5.2 TNFD LEAP process for financial institutions

As the TNFD LEAP process primarily targets businesses, TNFD has set out guidance for financial institutions to adapt the framework for their own risk analysis.

LEAP-FI aims to enable financial institutions to progress to the Locate or Evaluate phase of LEAP as appropriate for their specific business activities, the type of asset classes/financial products and the appropriate level of aggregation in their portfolio. For example:

- Financial institutions engaged in place-based financing, such as project finance, real estate, some insurance (e.g., hazard assessment) and some private equity firms, may already have access to location-based data and therefore can start with the Locate phase of LEAP.
- Listed and unlisted equity and debt, sovereign risk and commercial lending institutions are more likely to take a sector-focused approach and may therefore find it more appropriate to start their LEAP assessment with the Evaluate phase while using the Locate phase to evaluate the place-based dependencies and impacts on nature resulting from their investment and lending activities.

Financial institutions may find heat mapping methods useful as they start out. The output of the scoping questions could be, for example, an initial heat map of the priority nature-related exposures

and opportunities within the portfolio. After the prioritization is complete, financial institutions may undertake further in-depth reviews.

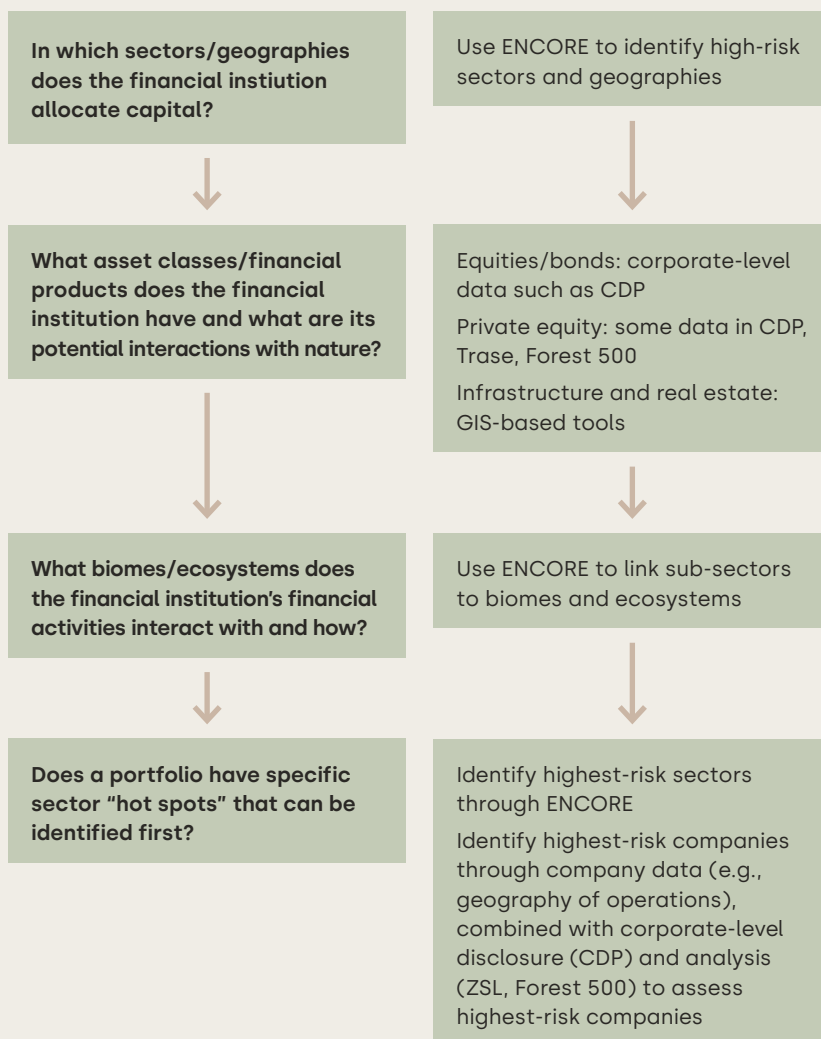
Financial institutions may choose initially to assess only one area of their business. The TNFD believes that over time, they should assess all areas of their business.

There are three core entry points for financial institutions: 1) sector/geography, 2) type of product/asset class and 3) biome/ecosystem. We outline these in further detail in Figure 2. Financial institutions should use their best judgement to identify the most appropriate entry point(s) for their business.

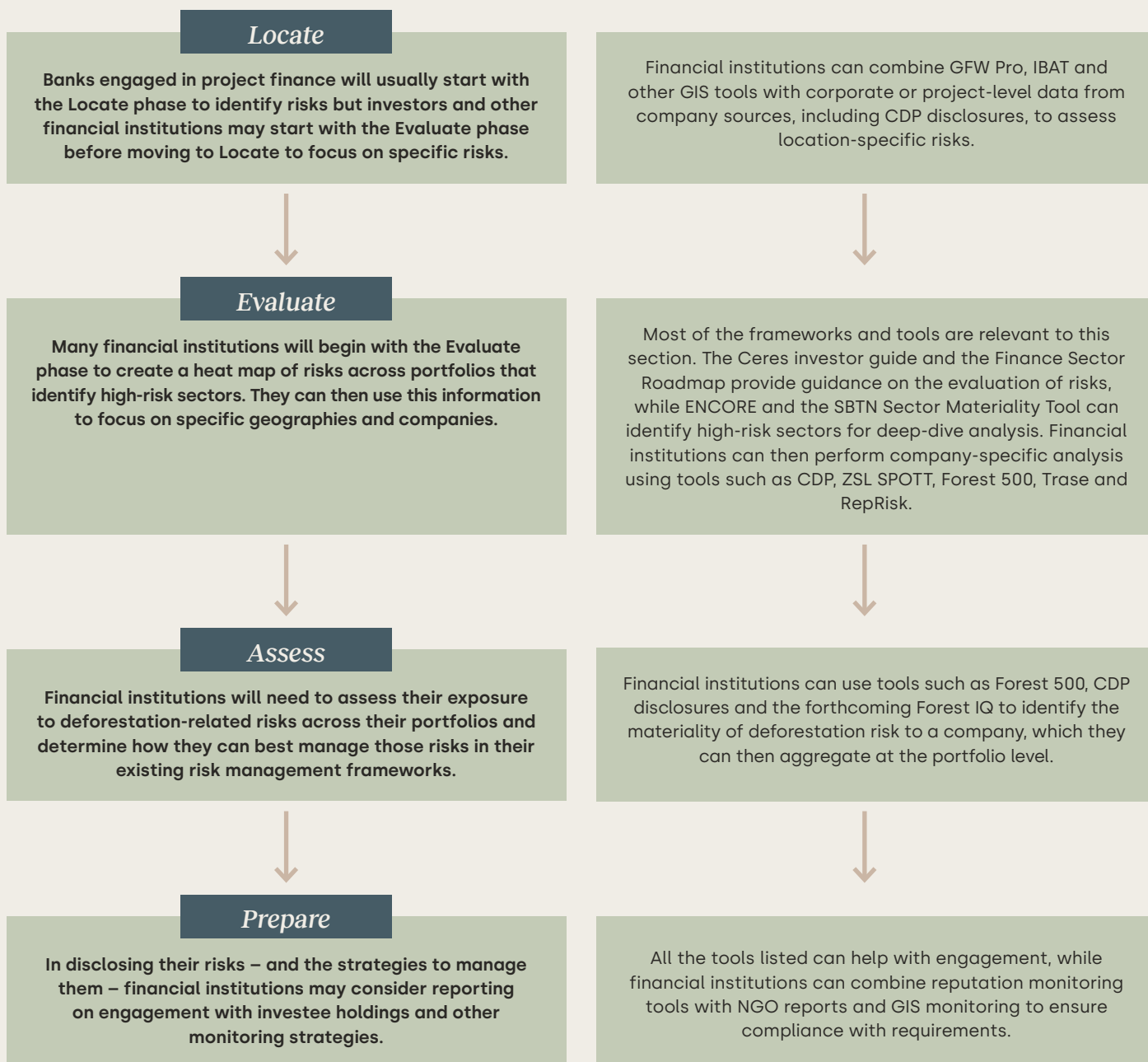
TNFD also provides guidance on disclosure recommendations.<sup>45</sup>

The core entry points and tools listed in the figure below directly link to specific steps in the LEAP framework, as specified in figure 3.

**Figure 2: LEAP core entry points for financial institutions**



**Figure 3: LEAP process for financial institutions**



### 5.3 Global Biodiversity Framework

The United Nations Biodiversity Conference (COP15) adopted the Kunming-Montreal Global Biodiversity Framework (GBF) to support the achievement of the Sustainable Development Goals and build on the Convention on Biological Diversity's previous Strategic Plans. The GBF sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the framework's key elements are 4 goals for 2050 and 23 targets for 2030.

Target 15 of the GBF encourages governments to:

*Take legal, administrative or policy measures to encourage and enable business, and in particular to ensure that large and transnational companies and financial institutions:*

*(a) Regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity, including with requirements for all large as well as transnational companies and financial institutions along their operations, supply and value chains, and portfolios;*

*(b) Provide information needed to consumers to promote sustainable consumption patterns;*

*(c) Report on compliance with access and benefit-sharing regulations and measures, as applicable;*

*in order to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and promote actions to ensure sustainable patterns of production.*

UNEP FI, in the Aligning financial flows with the Kunming-Montreal Global Biodiversity Framework guidance report, suggests some relevant implementation actions for financial institutions. We summarize them in Table 3, together with tools that can be used for each implementation action.

**Table 3: UNEP-FI guidance to implement the GBF and relevant tools**

GBF Implementation Actions suggested by UNEP-FI <sup>46</sup>	Relevant tools
Assess, monitor, report upon and disclose nature-related risks, dependencies and impacts, using voluntary science-based approaches such as the Taskforce on Nature-related Financial Disclosures (TNFD), also aligning wherever applicable with jurisdictional disclosure requirements such as the European Union Sustainable Finance Disclosure Regulation (SFDR) and Corporate Sustainability Reporting Directive (CSRD).	Use ENCORE for a broad overview of risks, dependencies and impacts, followed by company-level tools to assess these at a more granular level. Use GIS and risk monitoring tools to monitor compliance and ongoing performance.
Develop, adopt and align with science-based targets to reduce exposure to risks, dependencies and negative impacts, and generate positive outcomes, leveraging wherever possible on opportunities to build synergies between climate action and nature action. This should use recognized guidance such as that being developed by the Science Based Targets Network (SBTN), Principles for Responsible Investment, Principles for Responsible Banking, Principles for Responsible Insurance and Finance for Biodiversity Foundation.	Company-level and GIS/risk monitoring tools can help identify suitable investments.
Develop and promote financial solutions in support of activities with positive outcomes for nature, including nature-based solutions for combined action on nature and climate mitigation and adaptation. Build competitiveness and attractiveness and work towards scaling-up those activities, making the most relevant use possible of public-private blended financial approaches and other innovative financing approaches.	Use company-level datasets to create deforestation-free funds or deforestation overlays to other sustainability or low-carbon funds.
Reduce negative impacts to nature through engagement with companies, sector- and ecosystem-based policies (including exclusion policies), and effective, science-based application of internationally recognized safeguards.	Company-level datasets and risk monitoring tools can assist with meaningful and informed engagement with companies and also help to develop exclusion lists where appropriate.

# Key findings



# 06.

## 06. Key findings

We must maintain our forests to have any hope of mitigating climate change, halting biodiversity loss and sustaining the ecosystem services underpinning our economic and financial systems. The analysis of tools and frameworks and use cases offered in this report serve as a step toward fostering better assessment and disclosure of exposure to deforestation and other land-use change risks in investment and lending portfolios. Four overarching insights emerge from this analysis: data is sufficient and accessible, TNFD and new legislation are spurring action, collaborative finance sector initiatives are crucial to drive best practice and action is needed to identify and address any gaps and additional guidance or training needs, to end financed deforestation.

### 6.1 Data is sufficient and accessible, while some challenges still remain

Financial institutions have long argued that there is insufficient data on deforestation and that the available data is difficult to access. A collective effort pursued by several NGOs and initiatives has mostly addressed these, resulting in data quantity, quality and access constantly improving. Commercial services are now completing the offer. Therefore, the lack of data, resources or support are no longer valid excuses for financial institutions not to pursue deforestation-free finance.

As more companies report deforestation-related risks and opportunities, the tools available have expanded their coverage. More than 1,000 companies reported on forests to CDP<sup>47</sup> in 2022, compared to around 100 in 2012.<sup>48</sup> The forthcoming combination of data from CDP, Forest 500, Trase, ZSL SPOTT and others to create the Forest IQ tool will help collate the majority of NGO data into one dataset and make it easier for financial institutions to access. These datasets do not cover the entire investable universe, though we could argue that they cover those companies likely to be most material to a financial institution and are, therefore, sufficient to perform a reasonable risk analysis.

In the absence of third-party validation, verification of the actual implementation of corporate policies has been difficult for data providers. But the growing number of satellite monitoring tools and the integration of satellite data into assessments have significantly improved this data source over the past few years. In addition, the disclosure requirements of forthcoming deforestation regulations, such as the EU Deforestation Regulation (EUDR) and Schedule 17 of the UK Environment Act, should generate significant data. Financial institutions can now combine data on corporate policies and risks with GIS monitoring and reputation data from providers

such as RepRisk and NGOs to create a more holistic view of companies' actual performance and risk profile. Nevertheless, it is not common for a financial institution to have the in-house capacity to do such an analysis, so challenges remain in terms of turning data into decision-useful information. Moreover, data on associated human rights issues is still scarce and not easily accessible to financial institutions.

In terms of defining and understanding deforestation risks, the creation of the Accountability Framework initiative and the Science Based Targets Network's work on nature and biodiversity have helped to standardize definitions and set out guidance on deforestation-related targets. The *Ceres Investor Guide to Deforestation and Climate Change* sets out a step-by-step approach for investors to assess their exposure and outlines a set of investor expectations for corporate action aligned with the Accountability Framework initiative, while the *Finance Sector Roadmap* helps financial institutions set deforestation-free targets and map out pathways to achieve them.

Gaps still remain – coverage of the tools in terms of commodities and geographies remains limited, global supply chains are often opaque, the attribution of deforestation to specific actors is complex and engaging with upstream smallholders can be challenging – but the number of landscape-level initiatives is increasing. Supply chains are slowly untangling through tools such as Trase. By combining guidance such as the *Finance Sector Roadmap* with a variety of data sources, financial institutions can equip themselves to perform reasonable risk analyses of their portfolios and move toward deforestation-free financing.

### 6.2 TNFD and legislation are creating carrots and sticks for the finance sector to act

The creation of the Taskforce on Nature-related Financial Disclosures (TNFD) has increased awareness among financial institutions of nature-related impacts and dependencies and their links to climate-related risks and opportunities covered by the Task Force on Climate-related Financial Disclosures (TCFD). The TNFD has also put a spotlight on the contribution of deforestation to GHG emissions and the necessity of eliminating deforestation to meet net-zero and nature-related commitments such as the Global Biodiversity Framework.

Market players see TNFD as an incentive and a guide for financial institutions and companies alike to demonstrate, through better assessment and reporting, their thorough understanding of the interconnections between dependencies and impacts on nature and financial risks, and to show progress against their commitments to protecting their own long-term financial sustainability while protecting nature and climate.

On the other hand, legislative measures are driving corporate action on due diligence and disclosure, and increasing risks for those who do not comply. The recently introduced EUDR requires greater due diligence from EU companies importing forest risk commodities. Other major consumer markets are also in the process of developing similar regulations, such as the United Kingdom's due diligence obligation on forest risk commodities and the United States Forest Act bill. While these do not yet apply to financial institutions, they increase the regulatory risks of the companies in their portfolio. What were once considered reputational and non-material risks are now becoming very tangible and clear financial risks for companies and therefore for their finance providers.

This combination of increasing material risks and enhanced guidance and frameworks provide a clear and urgent case for financial institutions to address deforestation-related issues in their portfolios.

### 6.3 Finance sector initiatives are driving best practice

Investor engagement on deforestation has been ongoing for more than a decade, with many NGOs and their donor partners working with investors to improve their policies and corporate engagement. There is now a range of initiatives, as well as investor networks such as Ceres, the Principles for Responsible Investment (PRI) and FAIRR, that are working toward the same overarching goal, but with a different focus on issues and scopes.

These initiatives have established milestones for signatories' implementation actions and core expectations for companies in relevant sectors, driven action on data, tools and best practices and engaged with governments and policymakers to help accelerate appropriate legislation and regulations.

As a result of this accelerating investor action, in 2021, 37 leading international financial institutions committed to eliminate commodity-driven deforestation from their portfolios through the Finance Sector Deforestation Action (FSDA) initiative, highlighting that these commitments are a critical step in reversing deforestation globally and aligning the financial sector with a Paris Agreement-compliant 1.5°C pathway.

### 6.4 Next steps for the Forest Finance Risk Consortium

This report offers an overview of the existing frameworks and tools for assessing and disclosing deforestation and land-use change risks and enabling financial institutions to quickly identify which tools they can use for specific purposes. NGO experts, in many cases behind the development of the tools highlighted in this report, were instrumental in developing this guidance. These organizations are key in advancing the objectives and vision of the Forest Finance Risk Consortium.

In its next phase, FFRC will engage financial institutions to get insights on current gaps and needs and the most effective approaches to foster wider use of risk assessment tools, and on how to effectively engage with borrowing and investee companies to end deforestation.

Along with its focus on risk assessment tools, FFRC provides a space for bringing together financial institutions – from banks and insurers to asset managers, pension funds and service providers – with land-use change monitoring experts and climate- and nature-risk disclosure professionals to share best practices, build capacity and address issues such as data challenges, engaging companies and understanding the regulatory landscape.

FFRC values its close collaboration with others working to end financed deforestation. Please contact the FFRC Secretariat<sup>49</sup> (<https://www.wbcsd.org/Focus-Areas/Forest-Finance-Risk-Consortium-FFRC>) if you would like to contribute to this journey.

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# Acknowledgements

## Disclaimer

This report is released in the name of WBCSD. Forest Finance Risk Consortium (FFRC) participants reviewed drafts, ensuring that the report broadly represents the majority of project members' views. It does not mean, however, that every Member of FFRC agrees with every word.

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## About the Forest Finance Risk Consortium

Launched by the U.S. Department of State and led by WBCSD, the Forest Finance Risk Consortium brings together financial institutions (banks, asset managers, investors), land-use change monitoring experts, and climate- and nature-related financial risk disclosure professionals. The aim of the FFRC is to foster widespread and better assessment and disclosure of exposure to deforestation and other land-use change risks in investment/lending portfolios, with the ultimate objective to help financial institutions eliminate financed emissions and nature loss driven by deforestation.

<https://www.wbcd.org/Focus-Areas/Forest-Finance-Risk-Consortium-FFRC>

## About the World Business Council for Sustainable Development (WBCSD)

The World Business Council for Sustainable Development (WBCSD) is a global community of over 220 of the world's leading businesses, representing a combined revenue of more than USD \$8.5 trillion and 19 million employees. Together, we transform the systems we work in to limit the impact of the climate crisis, restore nature and tackle inequality.

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