

# Financial risks of nature loss



Species are being lost at hundreds of times the normal rate of extinction.<sup>1</sup> Loss of nature threatens human wellbeing, society and the global economy. Aligning private and public finance with environmental objectives could help to restore nature globally and mitigate the financial risks of nature loss.

## Background

Nature is usually described as all life on earth, including humans, and its interactions with physical environments. The variation within nature is referred to as biodiversity.<sup>1</sup> Loss of nature has accelerated since the 1970s with more than two-thirds of land and ocean area significantly impacted by human activity and one million species at risk of extinction.<sup>1</sup> Land and sea use change has been the leading cause of nature loss,<sup>1</sup> but the changing climate is predicted to exacerbate this in the near future (PN 617). While the economic value extracted from nature has continued to grow (such as crop production), many of nature's other contributions to people are in decline (PB 42), such as soil productivity (PN 662) and pollinator abundance (PN 619).<sup>1</sup> Businesses rely on nature for products and suitable operating conditions. If these services are lost, it will affect business profitability and viability.<sup>2</sup> The HM Treasury 2021 Dasgupta Review found economic systems have not accounted for and priced in humanity's reliance on nature, so incentivising its unsustainable exploitation and degradation.<sup>3</sup>

The financial sector, composed mainly of banks, insurers and investors are exposed to nature-related risks via the businesses that they advise, lend to, invest in or insure.<sup>4,5,6</sup> Risks can occur from physical loss or damage to operations, or where consumer

## Overview

- Over half of global GDP, \$44 trillion, was moderately or highly dependent on biodiversity in 2019.
- The financial sector drives nature loss through the activities it lends to, insures and invests in. It is also exposed to financial risks from short and long-term nature loss.
- Redirecting public and private financial flows away from nature damaging activities to those that enhance nature could put biodiversity on a path to recovery by 2050.
- Impacts on biodiversity can be difficult for the finance sector to measure and predict, particularly across supply chains.
- Standardised biodiversity disclosures could increase the understanding of risks and improve the credibility of green claims.
- Policy and regulation could require the incorporation of nature loss risks and impacts into financial decisions.

attitudes, policies and regulations shift.<sup>5</sup> These risks are currently embedded in financial systems but are largely not understood, measured or mitigated against.<sup>7</sup> The financial sector also drives biodiversity loss through its lending, investment, insurance and advisory decisions. Public subsidies, both direct and indirect can also encourage activities that drive nature loss and increase risks.<sup>1,8</sup>

The Environment Act 2021 aims to halt the decline of nature in the UK by 2030, a target endorsed globally by the UK in the G7 Nature Compact.<sup>9</sup> Existing global biodiversity ambitions, the Aichi Biodiversity Targets, have largely not been achieved. The Convention on Biological Diversity (CBD) Post-2020 Biodiversity Framework is being negotiated, including goals to reverse extinction rates, expand protected areas and remove subsidies which harm nature.<sup>10</sup> It's estimated up to \$895 billion will be required annually from private and public finance to achieve these targets.<sup>11</sup>

This POSTnote reviews the current understanding of nature-related financial risks and impacts, summarises the opportunities and limits of biodiversity disclosure frameworks and outlines additional mechanisms to align finance with national and global targets for nature recovery.

## Financial risks of nature loss

The financial sector decides where flows of capital are directed and can enable damaging practices through the activities they fund.<sup>12</sup> Banks have invested more than \$2.6 trillion in sectors primarily responsible for biodiversity loss,<sup>13</sup> with many lacking the processes or policies to track or manage these impacts and their exposure to nature-related risks.<sup>13,14</sup> Similarly, publicly funded development banks globally are estimated to fund \$800 billion of harmful activities annually.<sup>15</sup>

Many factors have contributed to a lack of oversight on the risks of nature loss in the finance sector. The short-termism of some financial decision-making is mismatched to the longer timescales of biodiversity decline.<sup>16</sup> Complex and untracked supply chains hide dependencies and impacts of businesses.<sup>2,17</sup> Many of the initiatives to manage environmental impacts are voluntary and self-governing.<sup>18</sup> Businesses and financial institutions have begun to recognise and address climate change risks, influenced by the international consensus and agreed targets for climate change, such as those set at COP21 in Paris.<sup>19,20</sup> However, most do not yet view biodiversity loss as a material risk (one posing a significant legal, reputational or financial risk).<sup>21</sup>

Recognition of the financial risks of nature loss may incentivise financial institutions to address only those impacts that pose a material financial risk to their own organisation within relevant timeframes. Their other impacts may not yet link to a clear financial risk for the organisation, despite harming nature and potentially other businesses or local communities.<sup>22</sup> A 'double-materiality' approach has been proposed, where both an organisation's dependencies and impacts on nature are considered material and reported on.<sup>23,24</sup>

### Types of financial risks

Businesses are exposed to nature-related risks when their operations impact or depend on nature (or both).<sup>3</sup> The financial risks of nature loss fall into three categories:<sup>5</sup>

- Physical risks are when environmental degradation disrupts, damages or destroys assets, operations and supply chains. For example, the loss of pollinators would place \$577 billion in annual global crop output at risk.<sup>1</sup>
- Transition risks occur where policy or legislation requires changes to operations, or where policies or consumer preferences shift and cause financial losses. Examples include the banning of illegally deforested products<sup>25</sup> or association with deforestation inflicting damage on companies and causing declines in their stock value.<sup>26</sup>
- Liability risks occur where activities do not meet environmental standards leading to, for example, litigation cases, enforcement fines and refusal of operating permits. For example, a water company was fined £90 million in 2021 for sewage discharge offences, the largest on record.<sup>27</sup>

These risks can transmit to the financial sector through various channels.<sup>5</sup> For example, they could affect the profitability of businesses and their capacity to repay debts, generating market and credit risks for financial institutions. Disruption to many businesses can affect the cash flow (liquidity) for financial institutions.<sup>28</sup> Financial institutions themselves can also be exposed to liability and reputational risks.<sup>29</sup> Large disruptions

can cascade through financial systems and precipitate financial downturns,<sup>28</sup> and some commentators suggest nature loss could unexpectedly trigger such a large disruption, referred to as a 'green swan' event'.<sup>20</sup>

Nature-related risks are most visible for sectors that rely on natural systems for products, such as the food and beverage industry, agriculture, fisheries and forestry.<sup>30</sup> Risks to other sectors are less visible, but they remain exposed to nature loss through their supply chains,<sup>2</sup> and/or knock-on effects cascading through global markets.<sup>4</sup>

### The significance of nature-related risks

All of the world's Gross Domestic Product (GDP) depends on biodiversity, with more than half (\$44 trillion) estimated to be moderately or highly dependent on biodiversity in 2019.<sup>2</sup> A fifth of all nations are at risk from ecosystems collapsing.<sup>31</sup> The modelled loss of tropical forests, collapse of global pollinators and reduction in marine fisheries predicted a contraction of global GDP by 2.4% by 2030, with up to a 10% drop in lower-income nations.<sup>32</sup> In 2022 the World Economic Forum ranked biodiversity loss as the third most severe global risk projected to occur in the next ten years.<sup>33</sup> The Dutch and French central banks have been the first to examine the exposure of their nation's financial institutions and found 36% and 42% of portfolios respectively are highly dependent on nature.<sup>34,28</sup> These risks are also embedded in public finance, with 40% of assets of global development banks exposed to nature loss.<sup>15</sup>

### Understanding biodiversity risks and impacts

The financial sector has been described as largely unaware of its dependencies, risk and impacts on nature.<sup>35,21</sup> A key challenge for UK finance is improving understanding of businesses' supply chains. Products sold in the UK can impact on biodiversity overseas.<sup>36</sup> For example, consumption of products using crops grown overseas, such as rice and palm oil, is estimated to be pushing 54 species to extinction.<sup>37</sup> Limited data on links of businesses to nature loss abroad are partly due to the lack of agreed metrics on impacts,<sup>7</sup> complex supply chains<sup>38</sup> and absence of accountability or requirements to report these interactions.<sup>7</sup> Biodiversity data itself may be sparse, particularly in areas that are both rich in biodiversity and subject to intense exploitation, such as some tropical countries.<sup>36</sup> Attempting to reduce biodiversity into a small number of indicators may overlook certain aspects of biodiversity leading to unreported degradation (PN 644). There is also a capacity and skills gap in the financial sector in understanding biodiversity and its data.<sup>39,40</sup>

Predicting future changes to biodiversity is challenging, particularly when future changes to the climate also need to be incorporated and there is a lack of previous experience with this scale of nature loss.<sup>6</sup> This translates into high uncertainty on the timing and severity of nature-related risks,<sup>3</sup> making traditional risk forecasting less suited for their assessment.<sup>6</sup> Particularly difficult to predict are 'tipping points',<sup>41</sup> where impacts build to reach a critical point and cause an ecosystem to shift to a new state that may be irreversible and less productive.<sup>42</sup> Due to these challenges, some have suggested adopting a precautionary approach<sup>6</sup> and emphasised the need to not wait for more detailed data and analysis before taking

**Box 1: Biodiversity assessment tools**

There are many frameworks to guide organisations in how to report on biodiversity, but also to aid their assessment of their dependencies, risks and impacts.<sup>43,44,45</sup> Some tools provide geospatial information on biodiversity and its services so companies can assess their dependence across the World.<sup>46</sup> For example, ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) was used by the Dutch and French Central banks to assess the dependence of portfolios on biodiversity.<sup>34, 28</sup> Other tools use trade and biodiversity data to track impacts through supply chains. For example, the 'Commodity Footprints Earth' dashboard<sup>47</sup> that is proposed for the CBD's Post-2020 monitoring framework,<sup>48</sup> provides a global assessment of the biodiversity impacts of the production and consumption of crop products.

Common weaknesses of tools are that they lack data on marine systems, lack granularity, lack certainty in quantitative estimates and do not cover all impacts and risk types.<sup>44,49,46</sup> Most tools focus on impacts generated in the upstream value chain (sourcing of raw materials), rather than downstream impacts (product use and end-of-life).<sup>50</sup>

actions to mitigate known issues.<sup>51</sup> Tools to improve understanding of biodiversity are available and in development (Box 1), with earth observation one tool of growing interest to improve monitoring of changes in natural habitats ([PN 628](#)).

**Aligning finance and environmental recovery**

The CBD's proposed Post-2020 Framework includes a target for biodiversity to be embedded across all public and private decision-making.<sup>10</sup> Companies can align their policies and activities with national and international policies and targets.<sup>52</sup> For example, some companies have set their own 'net zero' carbon emissions target to align with the Paris 2015 Agreement.<sup>53</sup> Alignment with broader policies may be harder for businesses to voluntarily adopt over risk-based management approaches.<sup>52</sup> Businesses may voluntarily address those impacts to minimise their own exposure to risk, but are not similarly incentivised to address their broader impacts. Biodiversity also lacks a globally agreed target<sup>6</sup>, which has been achieved for climate change. There is also difficulty in changing approaches due to long-term investments in unsustainable practices,<sup>54</sup> as well as tension between calls for a reduction in consumption with economic growth.<sup>6</sup> While some companies have addressed nature loss without a financial driver,<sup>55</sup> some commentators argue the financial sector is unsuited to address nature loss without policy and regulation to drive change.<sup>16</sup>

**Nature positive finance**

Analysis suggests that nature loss can be halted and in recovery by mid-century if ambitions for its protection and restoration are high enough.<sup>56</sup> This requires a shift towards a 'nature positive' economy, where public and private financial flows are redirected from nature damaging activities to those that enhance it.<sup>5</sup> Delaying this transition is predicted to double the costs to address nature loss.<sup>57</sup> For funds to move away from harmful activities, suitable green alternatives must be available.

Alternative green or Environmental, Social and Governance (ESG) markets have been growing over recent decades.<sup>43</sup> Green or ESG refers to funds or practices that incorporate sustainability issues to some degree into their decision-making.

For example, green or sustainability-linked bonds, loans and equity raise capital for projects to deliver positive environmental outcomes.<sup>44</sup> First introduced in 2007, the market for green bonds has grown rapidly and was estimated to reach \$450 billion in 2021.<sup>58</sup> The majority of these markets have focused on climate issues;<sup>59</sup> it is estimated that less than 1% is linked to biodiversity,<sup>8</sup> but more nature-focused funds have been recently launched.<sup>60</sup> Some businesses adopting environmentally positive policies have been found to reduce their risk to biodiversity loss, and improve their financial returns.<sup>61</sup> Investing in nature could offer joint financial and environmental benefits,<sup>62</sup> but investment in such enterprises is constrained due to the small size of such ventures.<sup>63</sup> While these markets are still growing, the World Economic Forum estimate nature and social positive finance opportunities are worth over \$10 trillion and could create 395 million jobs by 2030.<sup>64</sup>

The main challenge to sustainable investing viewed by a majority (59%) of investors is greenwashing,<sup>65</sup> where the businesses and funds' claims of sustainability are not verifiable or credible.<sup>66</sup> Greenwashing is relatively widespread,<sup>66</sup> and can mislead investors into thinking they are supporting sustainable initiatives and prevents fair competition between companies on their green credentials.<sup>67,68</sup> Adoption of agreed standards for what qualifies as 'green' and how businesses report on it can improve verification and confidence in green claims.<sup>68,69</sup>

**Nature-related risk and impact disclosure**

Disclosure is the provision of financial and non-financial information by organisations to their stakeholders to help them make better decisions.<sup>70</sup> Multiple market and government-led reporting frameworks have been recently introduced to guide businesses' assessment of their risks and impacts on nature.<sup>43</sup> Disclosures help to fill a data gap on the dependencies and impacts of businesses on nature, raising awareness of issues.<sup>71</sup> Such information enables nature-related risks to be incorporated into established processes for managing risk.<sup>72</sup> Inclusion of double-materiality in disclosure can expand an organisation's engagement with global sustainability goals.<sup>22</sup> Mandatory disclosure may compel companies to compete on green issues, stimulating innovation.<sup>67</sup> However, disclosure reporting does place an additional cost on businesses, but harmonised international metrics could minimise this.<sup>7</sup>

Market-led risk disclosure frameworks have and are being developed for global use on environmental issues, with climate change leading the way. The Taskforce for Climate-related Disclosure (TCFD) framework, launched in 2017, has been adopted as mandatory by the UK and other nations.<sup>73</sup> A nature-focused risk disclosure framework – the TNFD – aims to launch in 2023.<sup>74</sup> The TNFD aims to be compatible with TCFD to streamline their complementary use. Unlike its predecessor, it's proposed that the TNFD framework will also require reporting on impacts in addition to risks.<sup>74</sup>

NGOs and industry have supported the development of the TNFD framework,<sup>75,76</sup> with some calling for its mandatory adoption in the UK.<sup>76</sup> However, commentators stress that they are a first step only as in themselves do not mandate any change in practices. For example, a review of climate change disclosures concluded these had limited impact on financial flows in comparison to the launch of net-zero policies and

changing consumer opinion.<sup>77</sup> Re-alignment of incentives to direct activities away from harming biodiversity can more directly address risks and nature loss.<sup>78</sup>

#### *UK Sustainability Disclosure Requirements*

In 2021, HM Treasury announced the development of new Sustainability Disclosure Requirements (SDR).<sup>79</sup> This new reporting framework will incorporate existing mandatory climate change risk disclosure with reporting of impacts on broader environmental issues using a new 'green taxonomy'.<sup>79</sup> Green taxonomies catalogue which sectors, industries and operations are considered to be sustainable (PN 408), helping to standardise what qualifies as green investments.<sup>79</sup> Taxonomies are being developed and implemented across the world,<sup>80</sup> with the UK taxonomy currently in development using the EU taxonomy as its base.<sup>79</sup> The UK and EU taxonomies have six environmental objectives: climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; and, protection and restoration of biodiversity and ecosystems. To be classified as green, companies must significantly contribute to at least one objective and 'do no significant harm' to any others.<sup>79</sup> Current taxonomies do not categorise 'shades of green' or identify the most harmful 'red' activities.<sup>80</sup> It has been argued that a 'red taxonomy' could more directly address known destructive activities, such as deforestation.<sup>6</sup> These destructive activities could be banned, though the CBI has criticised this approach.<sup>81</sup>

### **The role of governments**

There is recognition within the financial sector that biodiversity loss cannot be addressed without policy support to guide, incentivise and 'level the playing field' in financial flows.<sup>8</sup> Financial institutions and NGOs have urged governments to strengthen national and international policy, such as the upcoming CBD COP15 talks.<sup>82,83</sup> There will be a challenge to balance the need for a single, clear target, with the need for multiple biodiversity indicators to reflect its broader dimensions (PN 644). Governments can facilitate industry action by providing regulatory certainty,<sup>81</sup> and guidance on key priorities for tackling biodiversity loss.<sup>75</sup> Governments can also enhance liability risks by holding both companies and financial institutions liable for breaches of biodiversity policy.<sup>78,29</sup>

The Dasgupta Review emphasised that biodiversity underpins society and economies and could be better reflected in metrics of economic well-being (as opposed to GDP) and embedded across decision-making.<sup>3</sup> Lack of consideration of biodiversity across policies could lead to conflict between policy goals and adverse outcomes. For example, trade agreements provide an opportunity to raise and align environmental standards.<sup>83</sup> The EU's green deal aims to reduce the impact of agriculture on nature, but without extension to trade policies it may lead to heightened impacts on nature from its imports.<sup>84</sup> Organisations have also emphasised the need for local peoples' values and dependencies on nature to be integrated into decision-making to help deliver a just transition to a green economy.<sup>1,85</sup>

#### *Regulation*

The UK's financial system and services are subject to oversight and regulation, primarily by the Financial Conduct Authority and the Bank of England, the UK's central bank. There is debate on

whether environmental issues are within the remit of regulators and the fiduciary duties of investors to their clients.<sup>12,86</sup> For example, the core mandate of many central banks is to maintain price stability,<sup>4</sup> and so lack authority to consider broader environmental and other issues in their policies. Nature loss could be brought under this remit and incorporated into their supervisory expectations for financial institutions with growing awareness of nature loss risks for financial stability.<sup>4</sup> Central banks could also be directed to align with broader government policies. For example, the Chancellor's 2021 remit letter to the Bank of England for the first time directed the Bank to align with the Government's net zero pledges.<sup>87</sup> Additionally, some argue that consideration of environmental risks already apply under investor's fiduciary duty to their clients.<sup>88</sup>

Governments can also take more direct action to reduce harmful activities. For example, enacting commitments to import sustainably certified products,<sup>83</sup> and banning unsustainable activities, such as the Environment Act 2021 exclusion of imports sourced from illegal deforestation.<sup>25</sup> While this policy has been welcomed by NGOs, they have also raised concerns that it could encourage nations to reduce legal protections for forests.<sup>89</sup>

#### *Offsetting*

Offsetting is the conservation, creation or restoration of nature elsewhere to compensate for nature loss.<sup>90</sup> Many global policies use offsetting to achieve 'no net loss' or 'net gain' in biodiversity, such as for new developments in the Environment Act 2021 (PB 34).<sup>91,92</sup> A key challenge with offsetting is that reducing biodiversity to simple metrics could lead to sub-optimal outcomes (PB 45). There is also concern that offsetting could be used in place of altering harmful practices and be used as a form of greenwashing.<sup>93</sup> It is recommended to be used only where nature loss is unavoidable.<sup>8</sup>

### **Public spending and subsidies**

Adoption of sustainable finance practices within the public sector and public procurement could also help to legitimise its wider adoption as well as generate market demand.<sup>36,63</sup> Few targets have been set for procurement of sustainable products, such as palm oil, with little monitoring of progress towards targets.<sup>94</sup> Public funding will also be essential for types of nature conservation that cannot be monetised.<sup>6</sup> Globally subsidies which harm nature are estimated to be at least \$1.8 trillion a year.<sup>95</sup> For example, the UK fisheries sector receives subsidies to improve its equipment and rebates on fuel.<sup>96</sup> These enable greater fishing activity,<sup>96</sup> which contributes to degraded marine environment status below that required by the UK Marine Strategy Regulations 2010.<sup>97</sup> Alternatively, public funding could be used to encourage private funding into nature positive projects by reducing investment risks.<sup>98</sup> These blended finance schemes include the £1 billion challenge in Scotland and the £10 million Natural Environment Investment Readiness Fund in England.<sup>51</sup> Sovereign green bonds can also raise finance for nature-positive schemes. The first UK Green Gilt bond was issued in 2021, raising £10 billion.<sup>79</sup> The Green Gilt is aligned with voluntary Green Bond Principles, which aim to mitigate greenwashing in bond markets.<sup>99</sup> Incentives to move away from damaging activities to positive ones can also be generated through tax rises or reductions.<sup>100</sup>

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