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BBP BETTER BUILDINGS PARTNERSHIP

TNFD FOR UK COMMERCIAL REAL ESTATE

Supporting UK commercial real estate companies to understand and apply the LEAP process and disclose against the TFND framework

OCTOBER 2024

The global loss of biodiversity and degradation of ecosystems are emerging as critical risks to businesses, threatening operations, supply chains, and access to essential resources. There has been a 69% decline in global species' population sizes between 1970 and 2014. With the World Economic Forum estimating that more than half of the world's economic output is highly or moderately dependent on nature, the risks are stark.

In recent years, commercial real estate companies have increasingly recognised the urgency of addressing the climate-nature nexus and responding to new policy drivers focused on nature. This relationship between climate and nature is becoming a key topic in industry discussions, underscoring the importance of integrating nature-related considerations into business strategies.

In response to these challenges, many commercial real estate companies, including members of the Better Buildings Partnership (BBP), have already begun to publish nature and biodiversity strategies and are actively seeking to embed nature-related outcomes into their business and fund strategies. A barrier to more rapid progress is the current lack of tools specifically designed for property owners.

In 2022, the BBP's members highlighted the need for practical guidance to support commercial real estate companies in understanding and implementing the Taskforce on Nature-related Financial Disclosures (TNFD) for their portfolios and assets. In response, the BBP convened a small working group, bringing together members from the BBP, the Managing Agent Partnership (MAP), and non-BBP firms, to develop such guidance. Sponsored by Brookfield Properties, we were pleased to collaborate with Greengage Environmental on the technical authoring, with BBP members providing invaluable practical insights, feedback and review.

This guide is for commercial real estate companies at all stages of the TNFD implementation journey. For those new to the nature and biodiversity crises, you will find useful background contact on why this matters to business. For those looking to gain an initial understanding of their organisation's specific impacts and dependencies on nature, this guide sets out the business case for action and an accessible guide to TNFD and the 'Locate, Evaluate, Assess, Prepare (LEAP) process – a key underpinning of TNFD. For those further along the journey, the detailed LEAP process guidance will support with TNFD disclosure.

Our hope is that overall, this guide will accelerate the understanding and uptake of TNFD principles across the commercial real estate sector. Significant strides are already being made in addressing nature and biodiversity. This guidance aims to provide a framework to quantify and amplify these impacts, to embed them into investment strategy, decision making and management processes and to support the BBP's members to continue playing a pioneering role in driving industry-wide change towards sustainability.

Sarah Ratcliffe, CEO, Better Buildings Partnership

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Executive Summary

Nature and biodiversity are increasingly recognised as critical components in commercial real estate, impacting business sustainability, operations, and risk management.

The degradation of ecosystems and biodiversity loss pose systemic risks that could disrupt supply chains and reduce property values. Biodiversity supports the essential functions of ecosystems, which in turn support society and the real estate industry by providing resources like building materials and regulating risks such as flooding. Recognising this, commercial real estate stakeholders are beginning to integrate nature-related considerations into their investment strategies, as natural resources are essential for their long-term viability.

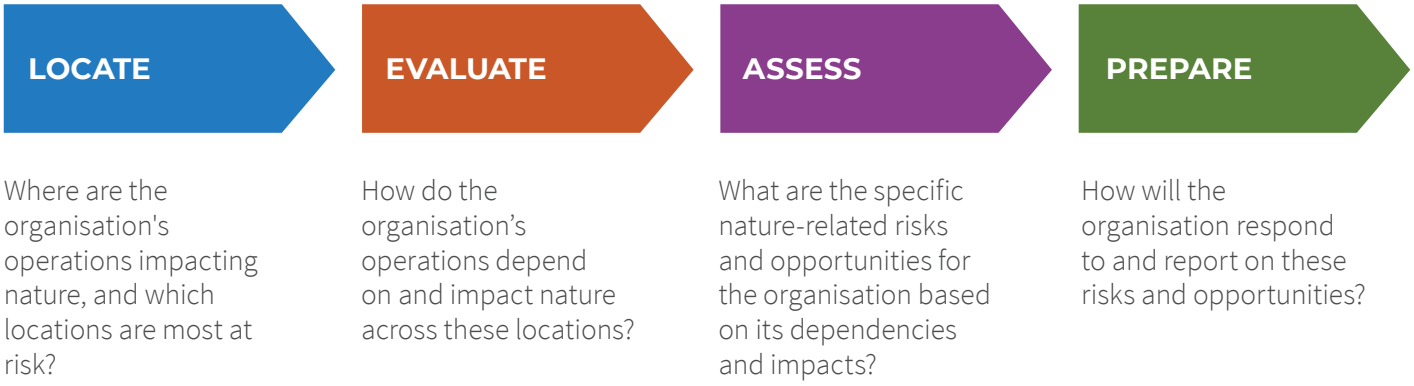
The Taskforce for Nature-related Financial Disclosures (TNFD) was established in 2021 to address the growing recognition of nature as a systemic risk to financial systems. Modelled after the Taskforce on Climate-related Financial Disclosures (TCFD), the TNFD provides a framework for organisations to identify, assess, manage, and disclose nature-related risks and opportunities. The TNFD's aim is to shift financial flows toward nature-positive outcomes. As of 2024, the framework has been adopted by over 400 organisations worldwide, including major real estate companies. Its recommendations focus on four key pillars: governance, strategy, risk management, and metrics.

A key component of the TNFD framework is the LEAP (Locate, Evaluate, Assess, Prepare) process, designed to help organisations understand their nature-related risks, dependencies, and impacts. Figure 1 summarises the key question asked at each of the four stages. The LEAP process guides businesses through a structured approach to nature risk management, informing strategy, governance, and capital allocation decisions. It is iterative, ensuring transparency and helping businesses engage with stakeholders across their value chain to deliver meaningful nature-related disclosures. By answering these four questions and related sub-questions, commercial real estate organisations will be equipped to develop a comprehensive TNFD disclosure.

With sponsorship from Brookfield Properties, the content of this publication was developed by Greengage Environmental. The publication was then reviewed and contributed to by a working group comprising members of the Better Buildings Partnership (BBP) and other commercial real estate organisations. Early drafts were shared with the TNFD Executive for feedback.

This publication seeks to provide commercial real estate organisations with practical guidance to implement the TNFD framework and make informed nature-related disclosures. It aims to help these organisations integrate nature-related considerations into their investment strategies and disclosures, aligning their actions with the TNFD framework.

Figure 1: Overview of LEAP process and key questions



Purpose and Intended Audience of Guide

Purpose

The real estate sector interacts with nature in many different ways, both directly and indirectly. The development and management of buildings can impact nature in situ, and natural systems can be impacted throughout the value chain for building materials and services. **The sector is highly dependent on nature to function, with its loss posing fundamental risks to asset performance and capital value**. To date, these interactions have been quite poorly understood, managed and disclosed. Commercial real estate investors are increasingly recognising the risks and opportunities that nature impacts present for their businesses and are seeking ways to incorporate them into their investment and management activities.

Following the success of the Taskforce for Climate-related Financial Disclosures (TCFD) in bringing climate considerations into financial reporting, a more recent initiative - the Taskforce for Nature-related Financial Disclosures (TNFD) - has emerged to tackle the analogous (and highly related) challenge for nature. The TNFD is a global initiative which aims to help businesses assess and disclose their nature-related financial risks and opportunities. It is a market-led, science-based initiative which aims to integrate nature into decision-making processes in the private sector and support a shift of financial flows towards nature-positive outcomes. The framework is structured around the same four pillars as the TCFD: governance, strategy, risk & impact management, and metrics & targets, which are designed to help organisations identify and manage their impact on nature.

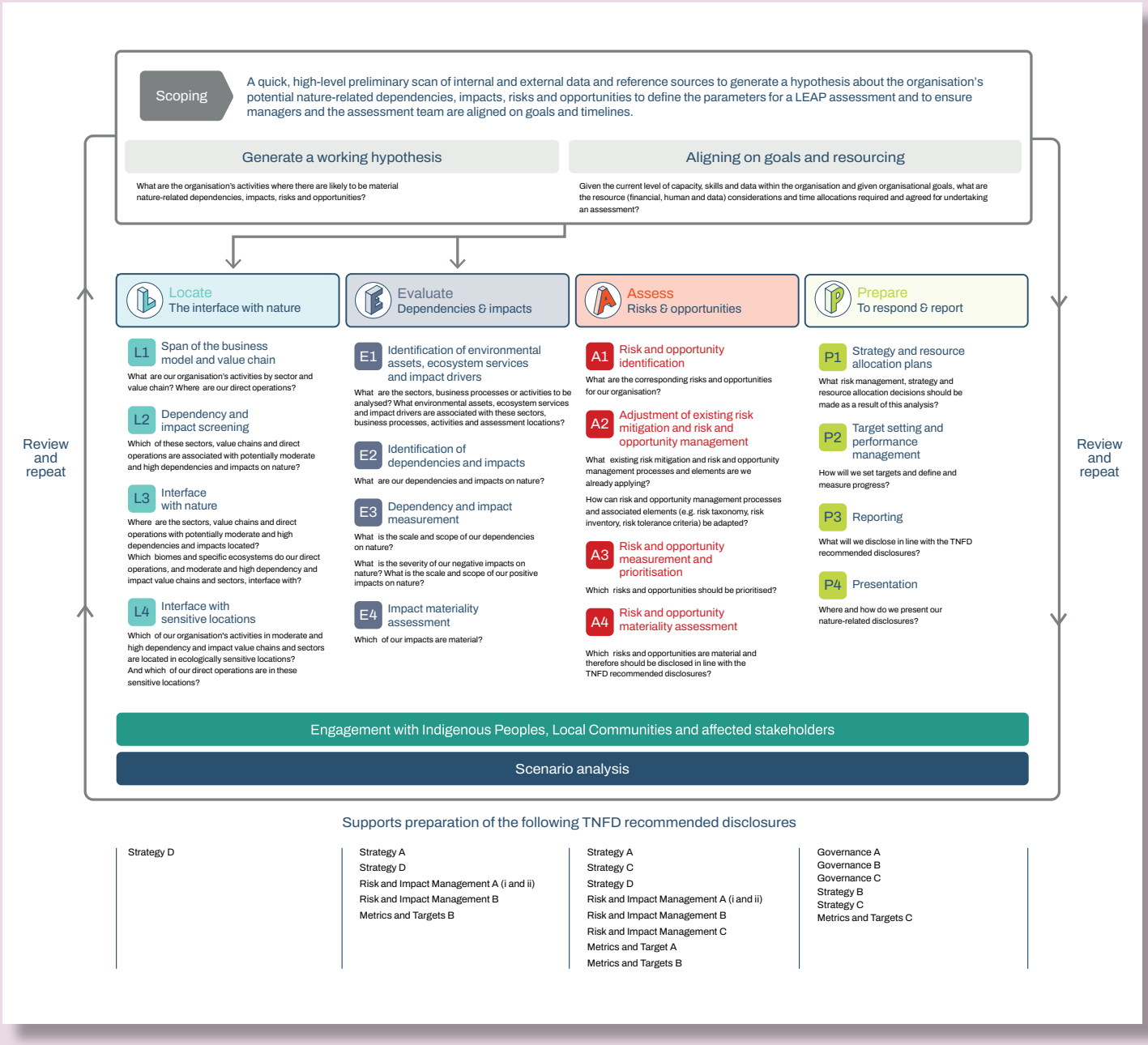
A key component of the TNFD Framework is the 'LEAP' (Locate, Evaluate, Assess, Prepare) process. The TNFD developed LEAP to be used by organisations to inform strategy, governance, capital allocation, and risk management decisions and to help organisations disclose material nature-related issues in line with the TNFD's recommended disclosures. Figure 1 is an illustration of the LEAP process including a mapping against the eleven TNFD disclosure recommendations.

This guidance seeks to support UK real estate investors to appraise their own practices in line with the 'LEAP' (Locate, Evaluate, Assess, Prepare) process, to engage with upstream and downstream partners in relation to their interface with nature, and to understand how the LEAP process can underpin an informative TNFD disclosure.

Some UK real estate organisations will already be collecting data that can help them work towards a TNFD-aligned disclosure, but gaps may exist. It is important to note that the LEAP assessment is an iterative process. It is critical for organisations to be transparent about what they can and cannot locate, assess, and evaluate, highlighting where gaps in value chain transparency or where lack of available data currently limits reporting. Acknowledging these gaps and constraints will ensure they can be overcome later. It is intended that this guidance will support a more standardised TNFD adoption pathway for UK real estate corporates and financial institutions, whilst acknowledging that each one will be company specific.

To support real UK estate investors, this publication provides a set of key considerations and recommended approaches and actions that can be taken by UK real estate organisations at each stage of the LEAP process. The content was developed by Greengage, informed by insights drawn from a working group convened by the Better Buildings Partnership, a collaboration of leading property owners working to improve the sustainability of commercial buildings. The working group comprised UK real estate investment managers, private property companies, listed property companies (including REITs), and wider investors, developers, and contractors. The BBP engaged extensively with the TNFD Executive during the development process for this publication. Early drafts formed the basis for the TNFD's consultation in September 2024 on the 'construction, engineering and real estate' sectors.

Figure 1: The LEAP Process



Source: 'TNFD In A Box v6: Board Level Overview', TNFD, March 2024

Audience

The Taskforce on Nature-related Financial Disclosures (TNFD) framework is designed to help organisations manage and disclose nature-related financial risks and opportunities. This guidance focuses on commercial real estate companies, specifically aiming to support their integration of nature-related considerations into investment strategies and disclosures.

Primary Audience:

- **Commercial Real Estate Owners:** This includes property investors and managers who are directly involved in the development, acquisition, and management of real estate assets. Within these organisations, the focus will be on:
  - **ESG/Sustainability Teams:** Responsible for aligning their organisation's strategies with sustainability goals, especially in relation to nature and biodiversity.
  - **Investment and Risk Management Teams:** These teams need to understand and integrate nature-related risks and opportunities into their decision-making processes.

Secondary Audience:

- **Lenders and Investors:** Entities that finance or invest in commercial real estate may find this guidance useful to assess the nature-related risks and dependencies of their investments.
- **Managing Agents:** Operational teams that oversee day-to-day management and compliance of real estate portfolios.
- **Advisors (including legal and sustainability / environmental consultants):** These professionals provide external expertise in navigating nature-related challenges and ensuring compliance with the TNFD framework.
- **Tenants:** Occupants of commercial real estate properties who play a role in supporting sustainability initiatives and contributing to nature-related goals through their operational practices and environmental impact within their leased spaces.

This guidance will help these stakeholders by offering a structured approach, particularly through the LEAP process (Locate, Evaluate, Assess, and Prepare), to better manage and report on nature-related impacts and dependencies within the real estate sector. This process is crucial for fostering transparency, mitigating risks, and driving nature positive outcomes across the sector.

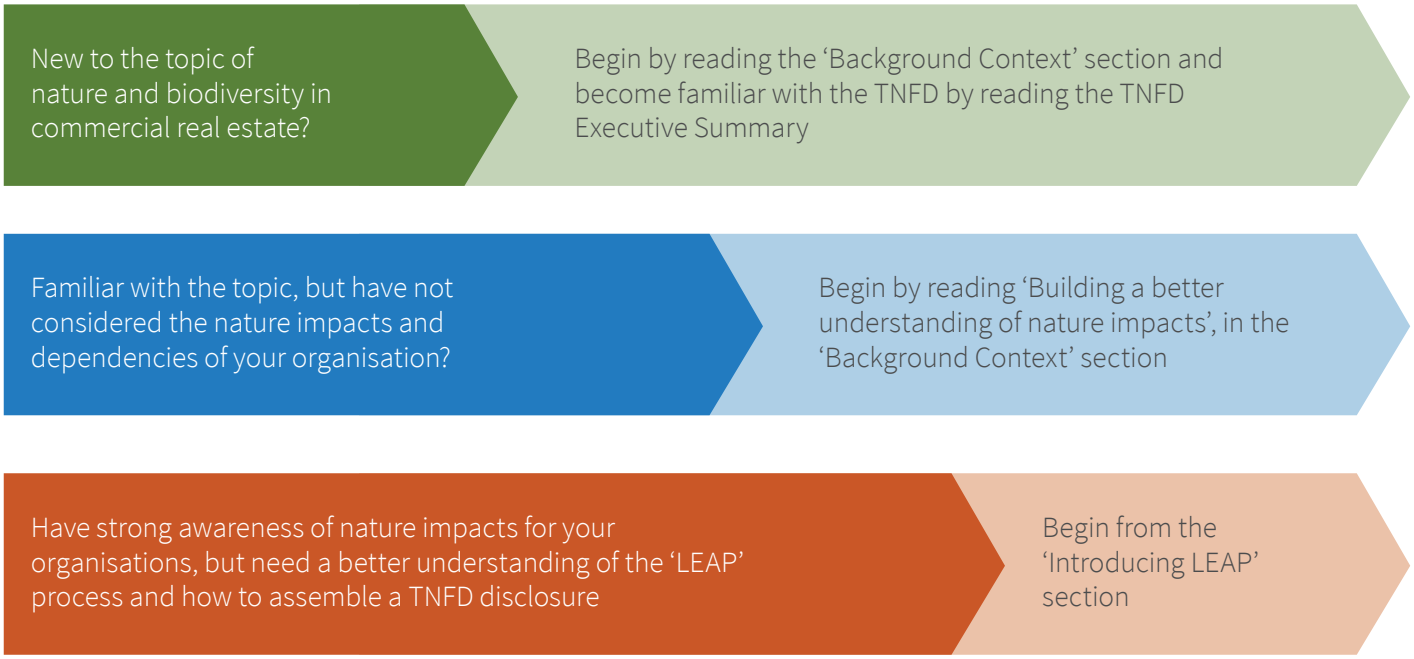
How to Use This Document

This publication is organised into the following sections:

- The section entitled **'Background Context'** provides ontextual information on the global and UK-specific nature and biodiversity crises, the impact on business, the drivers for corporate and investor action, and the emergence of the Taskforce for Nature-related Financial Disclosures.
- The section entitled **'Introducing LEAP'** outlines the LEAP (Locate, Evaluate, Assess, Prepare) process, a key component of the TNFD approach and used to support organisations inform their strategy, governance, risk management, and capital allocation decisions. This section sets out initial considerations before commencing the LEAP process, relating to topics such as materiality, scoping the value chain, and metrics and indicators.
- The section entitled **'Considering LEAP in UK commercial real estate'** applies the LEAP framework in detail for commercial real estate investment and development in the UK. This section can be used as a step-by-step guide to apply the LEAP framework to the reader's organisation.
- A series of Appendices provide further detail on topics such as the regulatory and policy drivers for action on nature, the direct and indirect dependencies and the impacts of commercial real estate on natural systems.

This publication can be used by commercial real estate companies at all stages of their LEAP and TNFD journeys. Figure 2 below provides a simple guide indicating where to begin, depending on familiarity with key concepts.

Figure 2: Guide to using this document



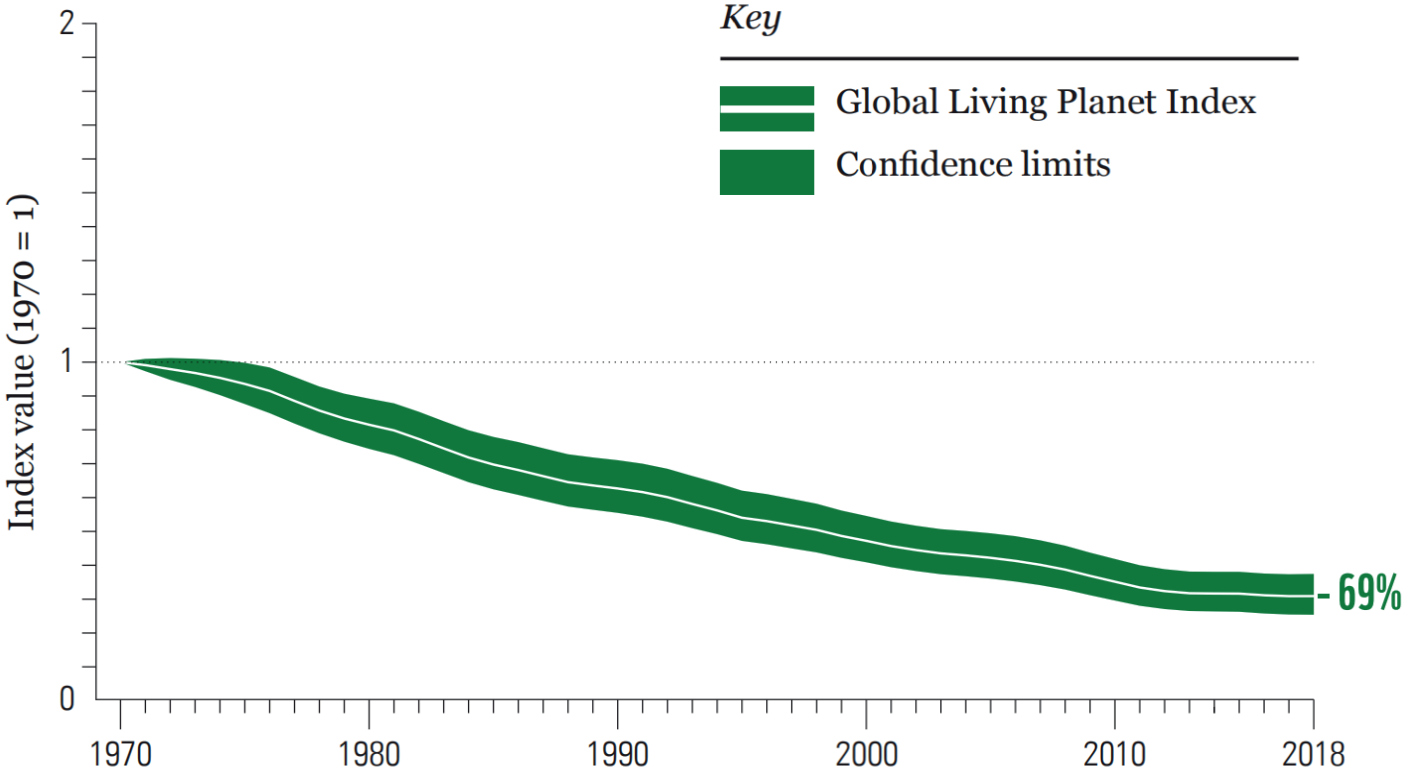
Background Context

Nature in crisis

According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), human activity has 'significantly altered' 75% of the Earth's land surface and about 66% of the marine environment.[1] 'Biological diversity',[2] which supports and comprises the 'variety of life on earth',[3] is now in steep decline.[4] Over one million species are threatened with extinction,[5] our seas are overexploited and polluted,[6] and our land is being degraded to such an extent that its biological functionality is deteriorating.[7]

As the Living Planet Index demonstrates (Figure 3), **there has been a 69% decline in global species' population sizes between 1970 and 2014**.[8] We are now thought to be entering a sixth mass extinction event, with implications for all species, ecosystems, and economies.

Figure 3: Global Living Planet Index (1970 - 2018)[i]



i The average change in relative abundance of 31,821 populations, representing 5,230 species monitored across the globe, was a decline of 69%. The white line shows the index values and shaded areas represent the statistical certainty surrounding the trend (95% statistical certainty, range 63% - 75%) (Source: WWF, 2022: 32).

Biodiversity - the "variability among living organisms from all sources including, interalia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part" - is vital for humankind.[9] Biodiversity supports the functioning of ecosystems, which in turn support the functioning of society. The rate of global decline in biodiversity is therefore one of the greatest threats facing humankind. The World Economic Forum's (WEF) Global Risks Report 2023 ranks 'biodiversity loss and ecosystem collapse' as the 4th most severe risk facing humanity over the next 10 years; the other 3 of which are also linked to nature and climate.[10, ii]

Crucially, **ecological collapse and climate change are interlinked and mutually reinforcing**. The 'climate-nature nexus' recognises our inability to mitigate – or adapt to – the impacts of climate change without protecting, restoring, and enhancing our global stocks of nature; our 'natural capital'.

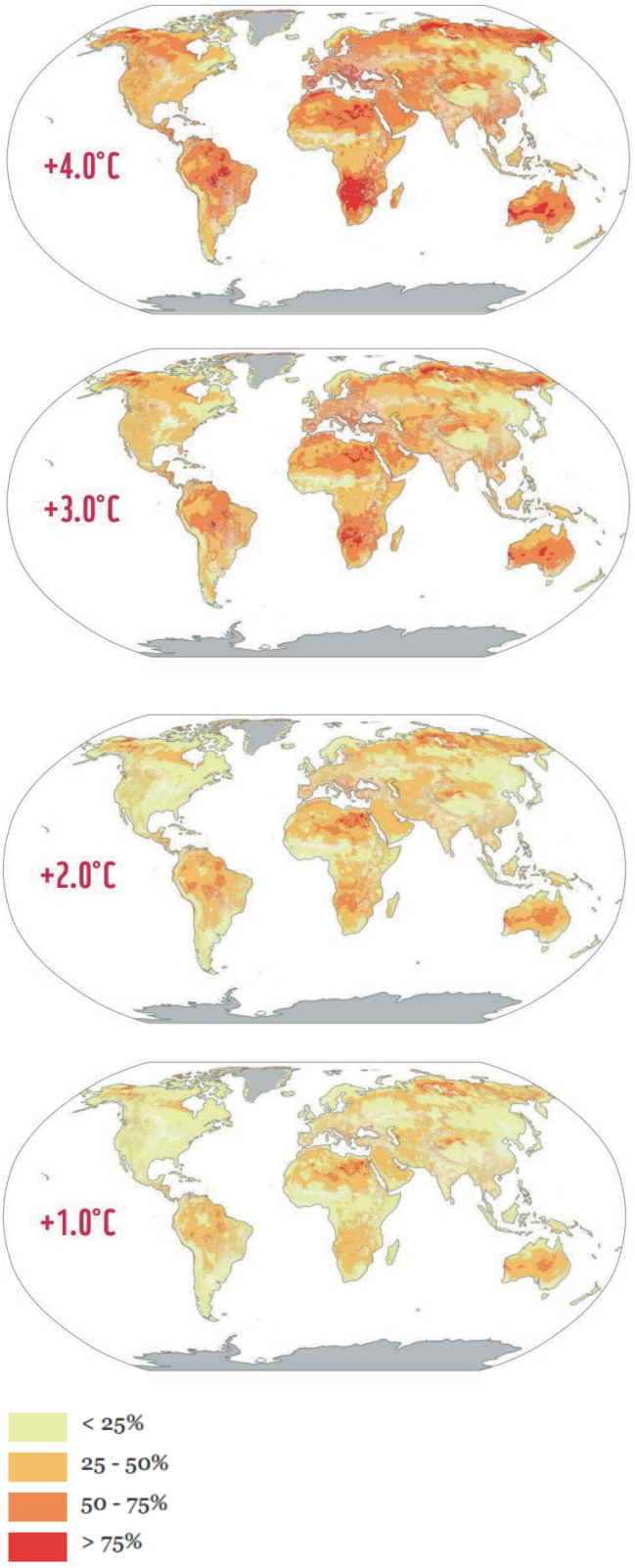
Nature is central to supporting climate adaptation and enhancing resilience and must therefore command the same level of consideration within corporate and financial decision-making as matters of climate. Failure to mitigate the impacts of climate change and curb global warming will result in an exponential loss of species (Figure 4), establishing a negative feedback loop with dire consequences for all.[11] A 1°C rise, which has already occurred, leads to more frequent extreme weather, rising sea levels, and biodiversity loss. The Paris Agreement aims to limit warming to below 2°C, with 1.5°C as an ideal target, as exceeding 2°C would bring more severe droughts, floods, and food insecurity. A 3°C rise would result in widespread ecosystem collapse, severe heatwaves, and mass displacement. At 4°C or higher, catastrophic changes, including irreversible ecosystem damage and unmanageable human disruption, are expected. Global efforts aim to prevent these outcomes by limiting warming below these thresholds.

Why does nature matter?

Estimates from the WEF suggest that more than half of the world's economic output – **US$44 trillion of economic value generation – is highly or moderately dependent on nature**.[12] In reality, everything is dependent upon healthy, stable, and functioning ecosystems to some degree or another, whether directly or indirectly.[13]

Framing economic activity as 'dependent' in this way is "a step away from valuing the damage done in 'cost to restore' terms, and a step closer to understanding the risk of biodiversity loss to operational cash flows, asset values and the wider economy."[14] The WEF has also recently estimated what percentage of 'Gross Value Added' (GVA) is dependent on nature for a range of industry operations and supply chains (Figure 5).

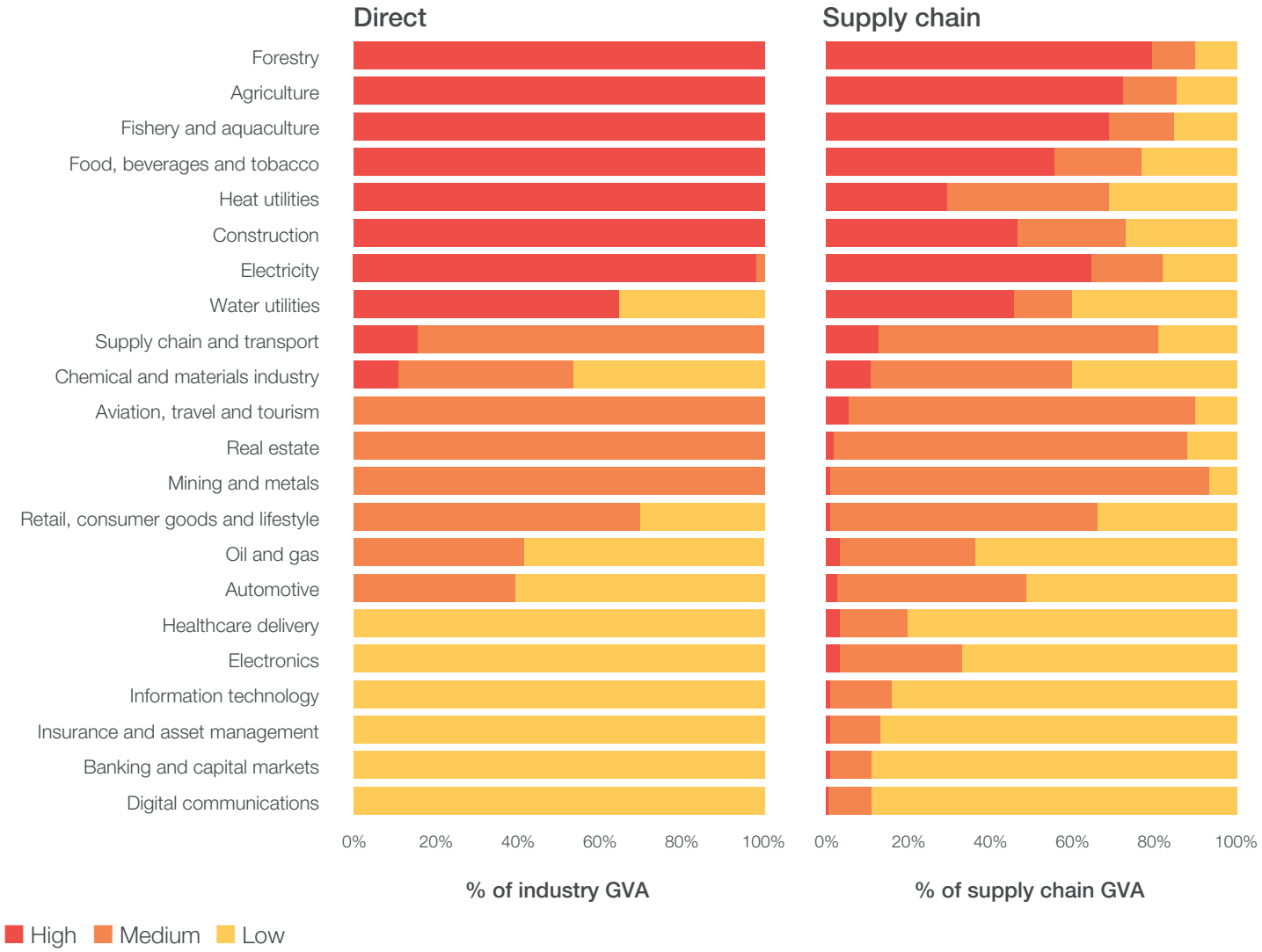
Figure 4: Projected loss of terrestrial and freshwater biodiversity compared to pre-industrial period[iii]



ii 'Failure to mitigate climate change', 'Failure of climate-change adaptation', and 'Natural disasters and extreme weather events' are the top 3 most severe risks facing humanity over the next 10 years, according to the WEF. In total, 6/10 of the most severe risks for the next 10 years are categorised as 'environmental.'

iii The higher the percentage of species projected to be lost (due to loss of suitable climate in a given area), the higher the risk to ecosystem integrity, functioning and resilience to climate change.

Figure 5: Percentage of direct and supply chain GVA with high, medium, and low nature dependency by industry



Source: 'Nature Risk Rising', World Economic Forum, January 2020

Both internationally and domestically, nature-related risks present significant financial risks to business models, value chains, and whole economies. According to a materiality assessment of nature-related financial risks for the UK by the Green Finance Institute (GFI), "nature cannot wait."[15] The GFI's analysis estimates that **continued degradation of nature could result in a 6% - 12% reduction in the UK's Gross Domestic Product** (GDP) by 2030 across different scenarios. To put this in perspective, the COVID-19 pandemic resulted in an 11% reduction in GDP in 2020.

Global industries, supply chains, and economies are dependent upon the goods and services nature provides, with one fifth of these services on the brink of collapse.[16] However, the links between nature-negative practices and economic outputs are insufficiently well-evidenced. In the language of the TNFD, the 'dependency and impact pathways' are unclear.

The disconnect between cause and effect and a continued lack of transparency and accountability across industries and value chains has enabled market-led nature degradation to accelerate unabated. If this continues, the degradation of nature could instigate unprecedented economic and societal crises, passing thresholds and tipping points that will accelerate - and be themselves exacerbated by - intensifying climate change.

Building a better understanding of nature impacts

Improving understanding of the dependencies and impacts of corporate and financial activities on nature requires mapping the pathways between economic activity, nature loss and financial risk. Figure 6 broadly outlines these interrelations, highlighting the connections between dependencies and impacts on nature and nature-related risks and opportunities.

Even in circumstances where negative impact drivers associated with specific business activities are understood, **nature loss often persists because the financial materiality of the loss is not factored into decision-making.** This is either because it is beyond the return horizon of a given project, or because such losses are external to its borders.[17] This 'tragedy of the commons' refers to the ways in which common goods, such as natural capital, can be compromised, exploited, or degraded - seemingly without limit - by a small proportion of actors, against the common interest.[18] Continued exploration for virgin fossil fuel extraction sites is one such example of this.

One way of tackling this short-termism is to understand how nature-related risks (whether acute, chronic, physical, or transitional) translate to financial risks for a given business activity or model. There are a number of identified 'transmission channels' through which nature-related risks can become financial risks for an organisation (Table 1). Central to this understanding, however, is knowing what and where an organisation's dependencies and impacts are.

Figure 6: Linking economic activity, nature loss, and financial risk [19]

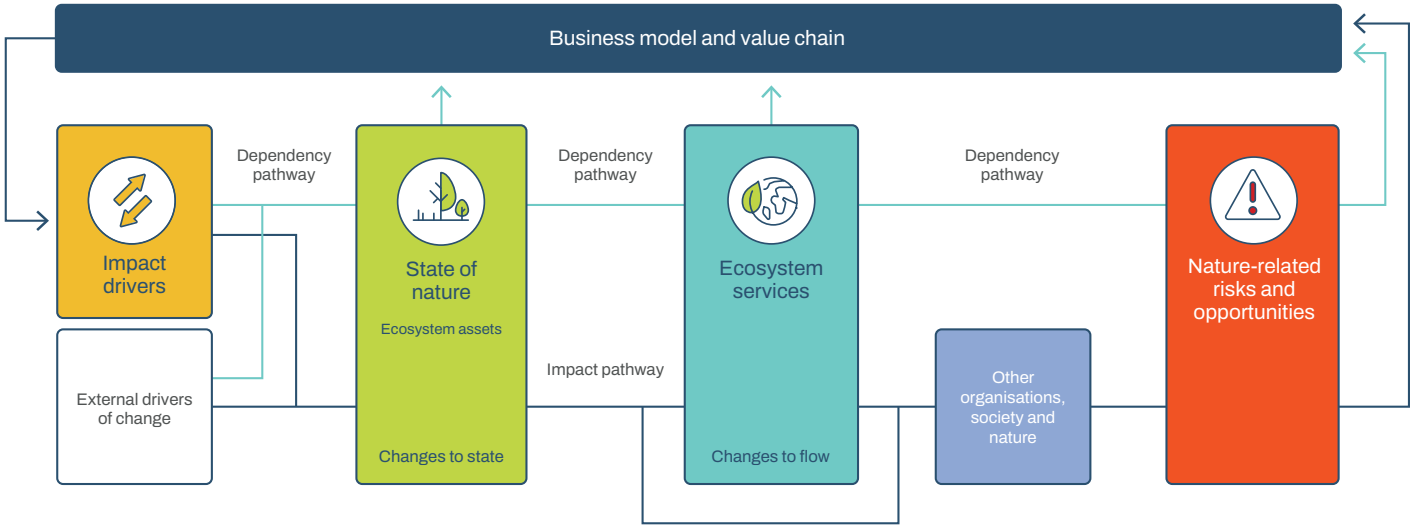


Table 1: Transmission channels - from nature-related to financial risks [20]

Transmission Channel	Impact	Details
1. Disruption of activities or the value chain	Acute	• Business interruption, e.g.: – Construction project delays due to late consideration of ecological appraisals and/ or mandatory Biodiversity Net Gain requirements (England). • Changing costs, e.g.: – Forest fires disrupting commercial timber markets and prompting change in supplier. • Changing demand, e.g.: – Increasing demand for sustainability and nature-related credentials from prospective building occupiers/ tenants. – Labour market frictions, which for a business would mean an increase in the amount of time to hire suitable workers or the likelihood of losing those workers. • Litigation, resulting in losses or damage, e.g.: – Legal challenges regarding the delivery of BNG in England or degradation of habitats via activities within the value chain. • Productivity changes, e.g.: – Severe heat or pandemic events impacting construction workers. • Property damage, e.g.: – Flood events or severe winds causing physical damage to property. These disruptions would add costs to doing business in the short-term.
2. Raw materiality price volatility	Acute / Chronic	• Refers to fluctuating commodity prices caused by disruptions at the beginning of supply chains, or systemic changes in the supply chain. • Disruption could occur via individual events (i.e., storms or fires) that damage the stock and disrupt the supply of a 'good,' which influences price. • Disruption could also occur through the gradual destabilisation and collapse of a natural system and its ability to provide critical ecosystem services/ goods, upon which value chains are dependent. • • Commodity price swings are "the second-largest driver of earnings uncertainty at publicly traded companies."[21] It is also especially relevant to banks offering hedging and trade finance products.
3. Pricing externalities	Chronic	• Pricing externalities means accounting for the economic, social and/or environmental impacts arising from the activities of an entity. • In the UK, the purchasing of Biodiversity Units to offset negative impacts to biodiversity occurring via development, to meet mandatory BNG requirements represents the pricing of an externality. • Failure to effectively consider BNG constraints and opportunities in the design stage of a construction project could result in costly mitigation measures in the form of off-site Biodiversity Unit purchases. • Priced externalities can therefore lead to short-term additional costs. Taking account of externalities to future-proof an organisation reduces the risk of sudden unexpected cost increases and drives operational efficiencies.

4. Stranded assets	Acute / Chronic	• Assets that "suffer from unanticipated or premature write-offs, downward revaluations or are converted to liabilities [as a result of] a range of environment-related risks." [22] • Work to date has predominantly focused on fossil fuel industries, though there are huge implications for real estate assets as a result of both physical climate risks (i.e., fluvial/ coastal flooding, overheating, etc.) and transitional risks (i.e., climate adjusted value).
5. Adjustment or relocation of activities	Chronic	• Long-term consequences of adjustment or relocation can include: • Changing costs/ price shifts (e.g., increased rent or operational costs). • Changing demand (e.g., shifts in market preferences or expectations). • Labour market frictions, where the inability to hire or retain appropriate workers forces adjustment. • Litigation, where the business model or operations shift indefinitely as a result of liability risk manifesting. • Productivity changes. • Property damage, such as from an increase in the regularity or severity of extreme weather events. • Any adjustment/relocation would also involve capital expenditure (CAPEX) to adapt.
6. Capital destruction	Acute	• Manifestation and damage incurred by a physical risk, i.e., flooding of ground and basement levels of a commercial asset following a flood event.
7. Reputational damage	Acute / Chronic	• Reputational damage can occur through association with environmentally (and socially) degrading practices. • Not only is there a nature-related risk associated with such activities, but the fallout from bad public relations can influence consumer behaviour (i.e., changing demand) and may alter value chain relations. • Association could occur either via direct operations or through value chain activities.

Drivers for action

Drivers for action can be framed as 'carrots' and 'sticks.' The carrots comprise those non-regulatory or legislative drivers that incentivise action, such as investor expectations and green finance opportunities. By comparison, the sticks are the regulations, laws, directives, etc., that enforce action. A detailed description of the 'carrots' and 'sticks' of action for nature is outlined in Appendix A, including description of the legislative, regulatory, and policy drivers at international, multi-national, and national scales. This publication focuses on the recommendations of the Taskforce for Nature-related Financial Disclosures.

Taskforce for Nature-related Financial Disclosures

Nature loss is now recognised as a source of systemic risk to financial systems with implications for individual financial institutions, businesses, economies, and wider society. This is the challenge identified by the Taskforce on Nature-related Financial Disclosures (TNFD) - an initiative launched in June 2021 with the aim of creating a framework for organisations to report and manage risks related to nature. The TNFD follows a structure analogous to the Taskforce on Climate-related Financial Disclosures (TCFD) and was established with the support of the United Nations Environment Programme Finance Initiative (UNEP FI), the UNDP, and the Global Canopy, among others, with backing from the G7 and G20. The recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) present a novel approach to risk and opportunity management, laying the foundations for nature to be considered alongside finances on the balance sheets and risk registers of corporates and financial institutions.

The TNFD recommendations provide companies and financial institutions of all sizes with a risk management and disclosure framework to identify, assess, manage and, where appropriate, disclose nature-related issues. As of August 2024, the Taskforce on Nature-related Financial Disclosures (TNFD) has seen significant uptake globally as organisations increasingly recognise the importance of integrating nature-related risks into their financial decision-making:

- Over 400 organisations across the globe have become early adopters of the TNFD framework. These include a mix of financial institutions, corporations, and asset managers who have committed to using the framework to assess and disclose their nature-related risks and opportunities. The early adopters are distributed across more than 50 countries, with significant uptake in Europe, North America, and increasingly in Asia-Pacific and Latin America.

- Sector Representation: The TNFD framework has been adopted by organisations in a wide range of sectors, including financial services, agriculture, forestry, real estate, energy, and manufacturing. The financial sector, in particular, has shown strong interest, with many leading banks and asset managers among the early adopters. At the time of writing, more than 20 real estate companies have signed up as adopters, including Better Buildings Partnership members Landsec and Frasers Property Limited.

- By 2024, a growing number of companies, particularly in the financial sector, have publicly committed to aligning their reporting with the TNFD framework. This includes several multinational corporations and financial institutions managing combined assets worth over $15 trillion.

- The TNFD has garnered support from the G7 and G20 and backing from the UN Environment Programme Finance Initiative (UNEP FI) and the UN Principles for Responsible Investment (PRI), amplifying its influence and encouraging global adoption.

- The UK government has indicated its support for the TNFD and has committed to exploring how it can be incorporated into UK policy and legislation. The UK government is one of the largest donors to TNFD, contributing £1.5 million towards the development of the framework as part of the UK's Green Finance Strategy. The government also encourages institutions to engage with the TNFD UK National Consultation Group and consider the TNFD recommendations.[23]

The development of the TNFD provides a universal framework for corporate nature risk and opportunity management, and disclosure. However, sector-specific guidance is still required, particularly for industries such as real estate, where the precise 'connections' between economic activity, nature loss, and financial risk are less clear. Assessing the materiality of, and acting on these dependencies, impacts, risks, and opportunities is an entirely novel exercise for many in the sector. It is hoped that this publication will support readers to better understand and apply the TNFD framework to their own organisations.

Introducing ‘LEAP’

A core component of the TNFD process is defining the boundaries of influence, interaction, and opportunity that exist for companies and financial institutions in relation to nature. The TNFD presents a novel nature-related risk and opportunity assessment methodology for businesses to support nature-related disclosures. The ‘LEAP’ process recommends that all corporates and financial institutions:

An overview of the TNFD's LEAP approach is outlined in Figure 2.1. LEAP is not a disclosure recommendation or mandated requirement for disclosure. Instead, it is intended to provide guidance for organisations to gather and include the information needed to appropriately respond to the disclosures.

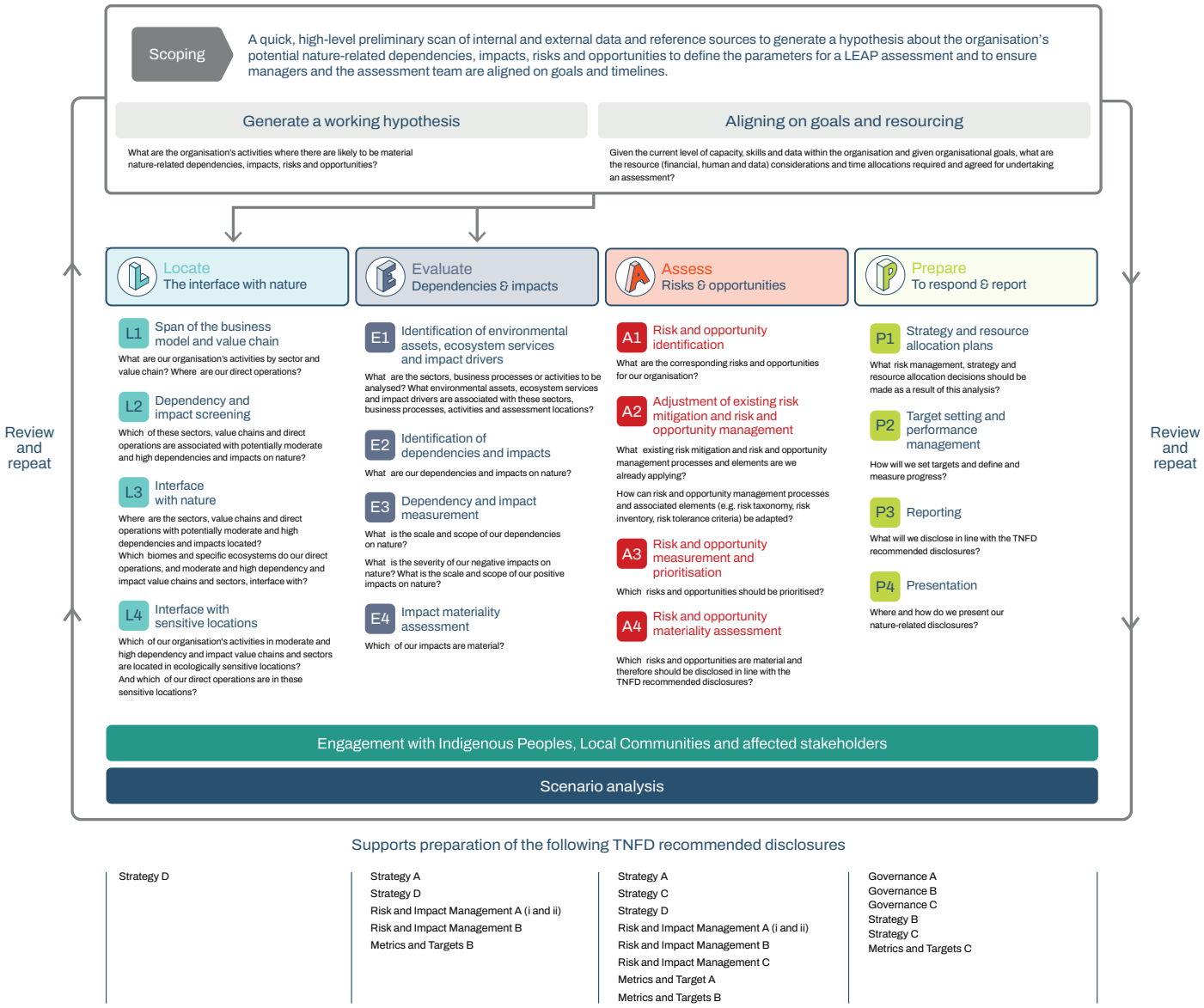
Businesses with existing corporate nature strategies, that have completed (or are completing) Taskforce on Climate-related Financial Disclosures (TCFD) reporting or have begun collating information on construction materials (via Environmental Product Declarations (EPDs) or Materials Passports) will have already considered some of the key elements to be identified, evaluated, and assessed via the LEAP process.

This section provides guidance on five considerations before engaging LEAP process specifically:

1. Approaching materiality
2. Approaching the value chain
3. Establishing commonalities
4. Defining assessment scope
5. Supporting evaluation, assessment and reporting, including metrics

The following section then applies the LEAP process to a UK commercial real estate context step-by-step.

Figure 7: Overview of TNFD's LEAP approach



Source: 'TNFD In A Box v6: Board Level Overview', TNFD, March 2024

Approaching Materiality

It is important for any assessment of risks and opportunities to be guided by **materiality: the principle that focuses on the significance of an issue or factor based on its potential impact on the decision-making process, financial performance, or strategic outcomes of an organisation**. Materiality helps prioritise issues that are most relevant and have the greatest potential to influence stakeholders, ensuring that resources are allocated effectively. Considering the materiality of any nature-related risks and opportunities will be a novel exercise for most organisations. The definition of materiality that is adopted by an organisation will be instrumental in shaping both the LEAP process and the contents of the overall disclosure.

The TNFD is flexible regarding which definition of materiality an organisation adopts to frame its LEAP assessment and disclosure. Organisations can choose to focus solely on financial performance or to consider financial materiality alongside wider impacts on nature and society. The former follows the International Sustainability Standards Board (ISSB) definition of 'single materiality' and constitutes the traditional approach to materiality assessment. The latter reflects a 'double materiality' approach, such as the one defined by the Global Reporting Initiative (GRI).[iv] Appendix C provides more detail for the reader in relation to the Corporate Sustainability Reporting Directive (CSRD) and the Sustainable Finance Disclosure Regulation (SFDR) specifically.

Approaching The Value Chain

Considering the nature-related dependencies, impacts, risks and opportunities associated with an organisation's value chain, both upstream and downstream, will too likely be a novel exercise for many organisations. The **TNFD guidance recommends that organisations take a proportionate approach, focusing initially on a small number of issues that are most likely to be of interest to users of the disclosure**, i.e., those that are 'material.' The scope of the disclosure can then be broadened out over time.

When considering nature-related impacts and dependencies, certain industries and organisations have much clearer and more direct impact and dependency pathways, such as those in development, agriculture, or extraction. By comparison, **real estate asset owners and managers will have more indirect or cumulative impacts upon nature, with much of their material impact and dependency falling outside of their direct control, or within their financial investments**. However, these organisations, along with lenders and financiers, have a catalytic role to play in influencing the organisations they invest in to produce disclosures and strengthen their management of risks and opportunities.

Whilst the precise nature of a real estate organisation's operations and value chain (upstream and downstream) will be specific to them, there will be common interactions and shared dependencies and impacts that occur.

Dependencies

These are the aspects of nature that an organisation relies on to operate. These can be specific ecosystem goods (e.g., raw/ manufactured building materials) or ecosystem services (e.g., water availability and flood management).

Impacts

These occur via changes in the state of nature (i.e., its quality or quantity) that affect its ecological, social, and/ or economic functionality. Impacts can be positive or negative, direct indirect or cumulative, and a single impact driver (e.g., land use change resulting from new development) can be associated with multiple impacts across different nature realms (i.e., land, freshwater, ocean, or atmosphere).

Dependencies and impacts across the real estate value chain

Dependencies and impacts are present and occur across the whole real estate value chain, from upstream activities to direct operations and downstream activities. Figure 5.1 maps some of these against different stages in the construction value chain.

iv A double materiality approach requires organisations to not only disclose how nature may impact the organisation's immediate financial performance (so-called 'outside-in'), but also how the organisation impacts nature and society ('inside-out'), both directly and indirectly. As such, an organisation adopting such an approach would "need to consider how nature loss, because of their own activities or those of others, may not only negatively affect their own performance, but also affect the activities of others in society, particularly vulnerable groups."

Figure 8: Indicative impacts and dependencies associated with construction activities

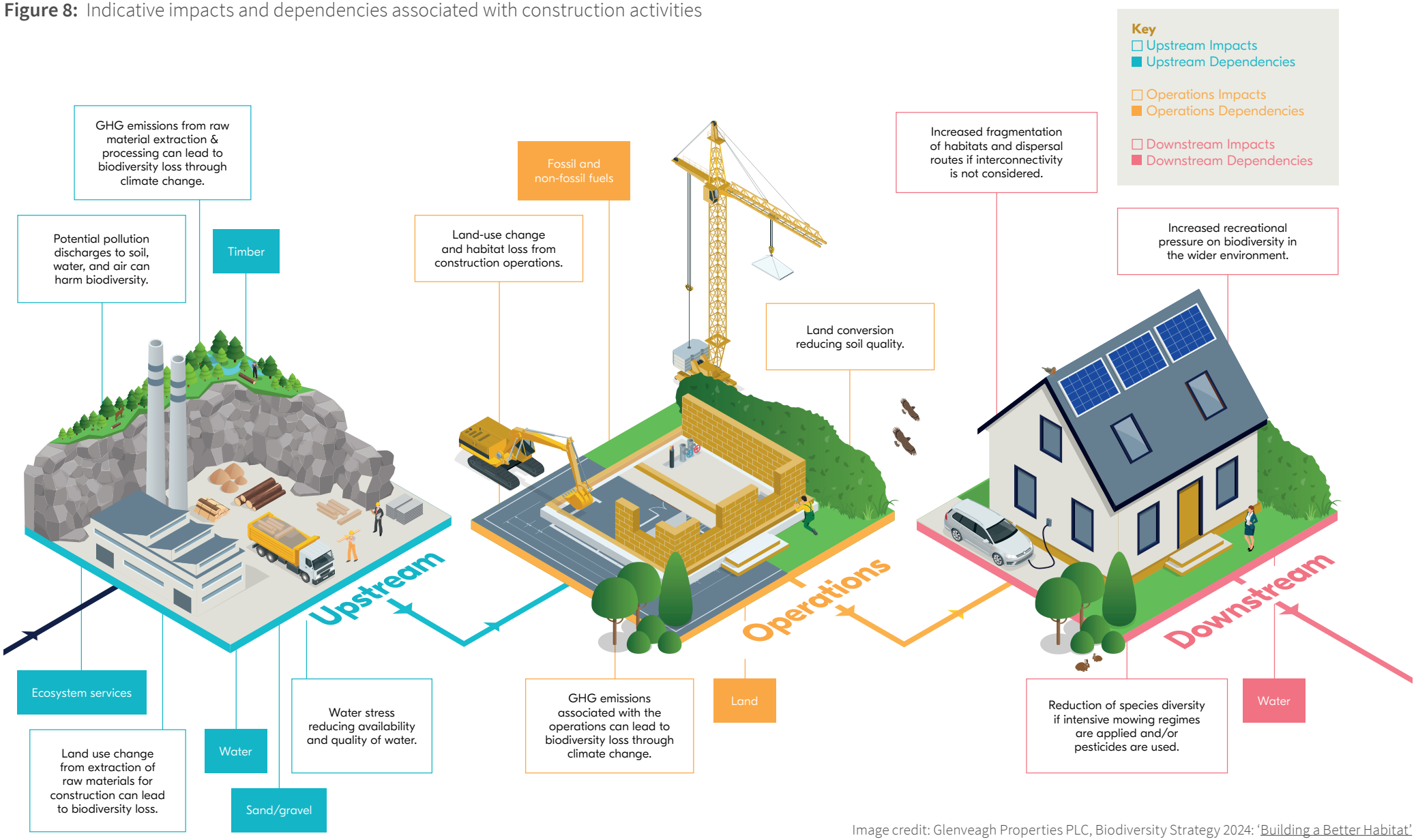


Image credit: Glenveagh Properties PLC, Biodiversity Strategy 2024: 'Building a Better Habitat'

For UK real estate activities, there are commonalities which allow for a consistent approach to be taken. One stated aim of this guidance is to propose these commonalities for UK real estate and provide steer for organisations when they begin their nature-related risk and opportunity assessment journey, from initial scoping, to LEAP assessment, reporting, and through to disclosure.

Appendix B sets out a proposal for these commonalities developed in the course of this project. Sectors are categorised using the Sustainability Accounting Standards Board (SASB) Standards system with relevant industry interactions. The table can be used to inform organisations undertaking the Locate stage of the LEAP assessment process - first, by establishing the span of an organisation's business model and value chain (step L1), and second to identify potentially moderate/ high dependencies and impacts associated with these sectors and industry interactions (step L2).

Material dependencies and impacts

Organisations will need to establish what the potentially material interactions are across their operations and value chain. There are a range of open access tools available that can support high-level materiality assessments of dependencies and impacts across operations and value chain interactions. Some easy-to-use resources include:

- ENCORE
- WWF Biodiversity Risk Filter Suite (for Biodiversity and Water)
- SBTN Materiality Screening Tool

The example materiality assessment outlined below has used the WWF's Biodiversity Risk Filter (BRF) suite to evaluate the dependencies and impacts associated with the UK real estate sector's industry interactions, as outlined in Table 2. The WWF's BRF Suite assigns dependency and impact ratings to a range of industry sectors.[24] The dependency data draws on ENCORE's natural capital risk ratings and outlines how dependent a sector is on a range of physical and reputational risk indicators.[25]

Any sector with a score of 3 or more is considered to have moderate (3), high (4), or very high (5) dependencies/ impacts. For stage L2 of the LEAP process, organisations are to consider any direct operations, sectors, and value chain activities with moderate dependencies/ impacts or greater. Table 2 totals the individual industry risk scores across all of the indicators in the BRF. The results highlight where most of the potentially moderate/ high/ very high impacts and dependencies are concentrated. According to the BRF assessment, the top five industries with potentially material dependencies/ impacts are:

1. Agriculture (plant products) - value chain
2. Agriculture (animal products) - value chain
3. Paper and forest product production - value chain
4. Land development and construction - direct operations
5. Metals and mining - value chain.

Table 2: Tally of impact and dependency scores for UK real estate-related industries using WWF's Biodiversity Risk Filter (BRF) suite

Industrial sector	Total industry risk score
Agriculture (animal products)	208
Agriculture (plant products)	212
Appliances & General Goods Manufacturing	104
Automotive, Electrical Equipment & Machinery Production	103
Chemicals & Other Materials Production	108
Construction Materials	124
Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	139
Electric Energy Production – Hydropower	143
Electric Energy Production - Solar, Wind	109
Electronics & Semiconductor Manufacturing	100
Food & Beverage Production	128
Food Retailing	81
General or Speciality Retailing	79
Health Care, Pharmaceuticals and Biotechnology	111
Hospitality Services	134
Land Development & Construction	171
Metals & Mining	170
Offices & Professional Services	75
Oil, Gas & Consumable Fuels	167
Paper & Forest Product Production	203
Telecommunication services (including wireless)	108
Textiles, Apparel & Luxury Good Production	118
Water utilities / Water Service Providers	126
Other (Average of all sectors)	134

Source: Greengage Environmental, September 2024

Key commodities

Understanding what commodities are produced (via direct operations) or produced (via upstream interactions) will shape the nature of an organisation's LEAP assessment and the scope of any disclosure.

Organisations can refer to the SBTN's High Impact Commodity List (HICL), which is a compilation of commodities known to be major drivers of biodiversity loss, including those listed in the EU's Deforestation Regulation (EUDR).The commodities associated with the socioeconomic systems 'built environment and infrastructure' and 'energy and extractives' are listed in Appendix D.

The TNFD has proposed a core disclosure list for construction-related commodities, which includes several that are listed on the HICL, as well as some additions[26]

- Natural commodities: aluminium, copper, gypsum, iron, lead, sand and timber
- Manufactured commodities: brick, cement, concrete, carpet, glass, insulation products, rubber and steel following the TNFD's guidance for the engineering, construction and real estate sector.[27]

Defining assessment scope

According to the TNFD guidance, there is "no single way to get started. Instead, **TNFD 'adoption pathways' will be unique to each organisation**, influenced by the precise nature of business activities, organisational structure, and the nature-related data already collected. What is proposed and presented here is a step towards a standardised TNFD adoption pathway for UK real estate.

Generate a Working Hypothesis

As outlined in Figure 1, the TNFD guidance recommends defining a 'working hypothesis' regarding the potential nature-related dependencies, impacts, risks and opportunities that would define the parameters of a LEAP assessment. The hypothesis should draw on available internal and external data sources, identifying what is likely to be material (in line with an adopted definition), whilst acknowledging any capacity and resource constraints that may further refine what is feasible and/ or appropriate to include within an initial scope.

The following working hypothesis for UK real estate is proposed as a starting point:

"The nature-related dependencies, impacts, risks, and opportunities that are material to UK real estate principally relate to construction activities and procurement of construction and fit-out materials."

Align Goals and Resourcing

It is recommended that organisations are aligned on goals and resourcing. Whilst precise guidance on the scale and scope of available or necessary resource will be specific to each organisation, the following may help further contextualise what is required:

1. Identify key stakeholders within the organisation. These will need to include development, asset and property management, procurement, risk and sustainability team members.

2. Consider the internal time requirements for these key stakeholders to input and oversee the LEAP and disclosure process, i.e., is a meeting every 'X' number of weeks appropriate or feasible? Can this meeting time be incorporated into existing sessions?

3. Consider the timelines of the exercise and what is aimed to be achieved by when, i.e., is the intention to complete a full or partial disclosure? If the latter, when will the organisation aim for a full disclosure?

Further guidance on scoping is summarised in the TNFD materials and summarised in Figure 9:[28]

Figure 9: Further guidance on TNFD implementation

Take an iterative approach to scoping:

- Be open to reassessment and revision of the scope over time.
- Acknowledge that the materiality may change as more detail is obtained, or as time passes.

Consider resourcing and resource limitations:

- Incorporate diverse expertise, utilising and soliciting both internal and external sources.
- Consider what your resourcing capacity and limitations may be.

Consider alignment and integration with existing reporting:

- Integrate with TCFD and wider sustainability reporting activities.

Identify and overcome data limitations:

- Assess what data you already have, and where any gaps lie. Consider any existing corporate nature/ biodiversity strategies, wider ESG reporting, TCFD reporting, etc.
- Plan to increase the detail and precision of data over time.
- Be open to completing disclosures qualitatively, at least initially, supplementing with quantitative metrics where possible and appropriate.

Consider your value chain:

- Identify issues, areas, goods, services, investments, and other activities that are likely to be material, focusing on these initially.

Supporting evaluation, assessment and reporting

Alignment around common industry metrics and indicators is a key success factor for any ESG outcome, and for nature and biodiversity impacts this is no different. To support evaluation, assessment and reporting of dependencies and impacts, a set of recommended indicators are provided in Appendix E. Table 4 below summarises the key metrics related to these indicators.

It should be noted that for some of these areas, relevant data may already be collected as part of existing financial and non-financial reporting. **These areas have been presented in bold typeface where the BBP understand this is generally the case, to support the reader.**

A suite of core and additional metrics and indicators are provided by the TNFD, listed on Pages 51 - 68 of the TNFD's guidance for the engineering, construction and real estate sector. Core global disclosure metrics (such as those for construction-related commodities) are recommended to be reported on a comply or explain basis. A range of additional metrics and indicators have been proposed and can be drawn on where relevant to best represent an organisation's material nature-related dependencies, impacts, risks and opportunities. These additional metrics and indicators have been reviewed, and novel UK-specific additions have been proposed, to help support UK real estate organisations through the LEAP process and in their disclosures. A full table of these metrics is provided in Appendix F. They are classified according to whether they are 'core' ('C'), 'proposed core ('PC'), 'proposed additional' ('PA'), or 'proposed for UK' ('PUK').

Table 4: Summary of metrics and indicators to support assessment, evaluation and reporting

Metric type	Metric
Core (C)	Extent of land/ freshwater/ocean-use change
	Pollutants released to soil split by type
	Wastewater discharged
	Waste generation and disposal
	Plastic pollution
	Non-GHG air pollutants
	Water withdrawal and consumption from areas of water scarcity
	Quantity of high-risk natural commodities sourced from land/ ocean/freshwater
Proposed Core (PC)	Placeholder indicator: Measures against unintentional introduction of invasive alien species (IAS)
	Placeholder indicator: Ecosystem condition
Proposed Additional (PA)	Change in fragmentation due to linear infrastructure
	Spills
	Manure and compost use
	Green space creation
	Light pollution
	Noise pollution
	Invasive alien species management
	Circularity of material use
	Value chain certification
Proposed for UK (PUK)	Biodiversity protection and enhancement
	Value chain transparency

Source: Greengage Environmental, September 2024

6. Considering LEAP in UK commercial real estate

This section applies the four stages of the LEAP process in detail to a UK commercial real estate context. The figure below shows the key 'research question' which underpins each stage.

For each stage the guidance sets out:

1. The overall purpose of the stage
2. The desired outputs, where relevant differentiated between a 'corporate' and a 'financial institution' (see Note to right)
3. A table providing the detailed sub-stages, key questions, considerations and approaches and actions

Where are the organisation's operations impacting nature, and which locations are most at risk?

How do the organisation's operations depend on and impact nature across these locations?

What are the specific nature-related risks and opportunities for the organisation based on its dependencies and impacts?

How will the organisation respond to and report on these risks and opportunities?

Note: Interpreting 'Corporates' and 'Financial Institutions' (FIs) for the commercial real estate sector

The TNFD framework differentiates between corporates and FIs in some aspects of the framework

- Corporates typically refer to companies that engage in business activities related to producing goods and services, focusing on operational impacts on nature.
- FIs primarily manage financial flows and investments, with their nature-related risks and opportunities tied to the financing and investment portfolios they manage. Commercial real estate companies, depending on their business model, could fall into either category or bridge the two.

In the context of commercial real estate:

- 'Corporates' could be considered as those are companies that directly involved in the development, ownership, management, and operation of commercial real estate properties. This might include private property companies, Real Estate Investment Trusts (REITs), other listed property companies, developers, as well as property management and facilities management firms.
- 'Financial Institutions' could be considered as those entities that primarily manage financial flows related to real estate, rather than directly engaging in property development or management. They provide financing, investment, or advisory services related to real estate transactions. This might include Real Estate Investment Funds (including include private equity firms and asset managers), banks and lenders, insurance companies and pension funds / institutional investments.

Stage 1: Locate

In the Locate stage, organisations identify specific areas where their operations, supply chains, or investments intersect with nature. By pinpointing these critical areas, companies can better understand where they are most likely to impact or depend on natural resources and ecosystem services. The Locate phase encourages organisations to filter and prioritise potential nature-related issues using three filters: sector, value chain and geography. This stage sets the foundation for deeper analysis by establishing the geographical and ecological context of the organisation's nature-related interactions.

Sub-stages

L1
Span of the business model and value chain

What are our organisation's activities by sector and value chain?

Where are our direct operations?

L2
Dependency and impact screening

Which of these sectors, value chains and direct operations are associated with potentially moderate and high dependencies and impacts on nature?

L3
Interface with nature

Where are the sectors, value chains and direct operations with potentially moderate and high dependencies and impacts located?

Which biomes and specific ecosystems do our direct operations, and moderate and high dependency and impact value chains and sectors, interface with?

L4
Interface with sensitive locations

For our organisation's activities in moderate and high dependency and impact value chains and sectors, which of these are in ecologically sensitive locations?

And which of our direct operations are in sensitive locations?

Desired outputs

For corporates

- A list of potentially material activities in the business model and value chain
- A list and / or map of assessment locations

For financial institutions

- A heatmap of potentially material sectors (L2).
- High-level geographies of potentially material sectors, and analysis of the types of ecosystem or biome likely to be associated with these sectors and geographies (L3).
- An analysis (most likely by portfolios) of its clients/ investees' interface with sensitive locations.

L1 Span of the business model and value chain

L2 Dependency and impact screening

L3 Interface with nature

L4 Interface with sensitive locations

Key question
What are our organisation's activities by sector and value chain?
Where are our direct operations?

Considerations	Approaches and Actions
UK real estate typically has three principal interaction areas where nature-related dependencies, impacts, risks and opportunities can occur: 1. Construction activities (incorporating new construction and refurbishment/ retrofit activities as well as end of life);[v] 2. Standing asset management activities; 3. Investments For each of these three interaction areas, consider the associated sectors, value chains, and geographic locations For **construction** activities, consider: • Associated sectors/ value chain (see Table 1.1) • Location of active development sites • Location of proposed/future development sites • Types of products and materials purchased / used - i.e., what are the associated sectors and value chain? • End of life • For organisations involved in the construction phase, this is the 'downstream' value chain. • For organisations involved in the construction phase and that own the asset, this is the direct operations. For **standing asset management** activities, consider: • Associated sectors/ value chain (see Table 1.1 for a 'typical' cross-section) • Location of assets (owned) • Location of assets (managed) • Types of products and materials purchased / used - i.e., what are the associated sectors and value chain? • End of life • Customer operations, i.e., activities of building occupiers For **investments**, consider: • What is the nature of our business as a financial institution? • Which sectors or industries comprise our real asset investment portfolio? • Across which regions do we allocate capital? I.e., where are our real asset investments located? • What dependencies, impacts, risks and opportunities are associated with the asset's lifecycle and end of life	Review the sectors applicable to the business model and value chain, and/or in which capital is allocated or products/services provided using the SASB Sector Classification (SICS) The SASB Materiality Finder can be used to see what disclosure topics are associated with each industry. When considering the location of direct operations, break it down and approach as follows: • For construction activities and standing assets, collate data on existing (and proposed) site boundaries. This can be in the form of Geographic Information Systems (GIS) shapefiles (.shp), along with longitudinal and latitudinal coordinates, postcodes, etc. Use GIS tools, including ArcGIS, QGIS, Google MyMap, etc. to map these • For investments, introduce transparency on who, what, and where funds are being invested, and the significance (or materiality) of these to the business (i.e., the location of real asset investments)

v From here on, 'construction activities' will refer to new as well as refurbishment and retrofit activities.

L1 Span of the business model and value chain

L2 Dependency and impact screening

L3 Interface with nature

L4 Interface with sensitive locations

Key question

Which of these sectors, value chains and direct operations are associated with potentially moderate and high dependencies and impacts on nature?

Considerations	Approaches and Actions
For sectors and value chains identified in L1, there are a range of screening tools available that can support a high-level assessment of associated dependencies and impacts on nature. For the three interaction areas (i.e., construction activities, standing asset management, and investments), consider what the broad types of interactions with nature could be. At a high level, this would involve considering the broad drivers of nature change (e.g., land use change, climate change, pollution, etc.) and the types of impacts and dependencies associated with them, acknowledging that these can be both direct and indirect. The magnitude of impacts/ dependencies will be informed by the direct/ indirect nature of interactions, as well as the materiality of these to each organisation. Materiality is considered further in steps E4 and A4.	Cross-reference L1 information against a number of open access datasets to identify potentially moderate/ high dependencies and impacts on nature, such as: • ENCORE • Science Based Targets Network (SBTN) High Impact Commodity List (HICL) and Materiality Screening Tool (MST) • WWF Risk Filter Suite (Biodiversity and Water) • WWF Wood Risk Tool • World Resources Institute (WRI) Aqueduct Water Risk Atlas An impact and dependency screening exercise has been undertaken for the 'typical interactions' of UK real estate and can be found in Appendix F. The results highlight where attention should be focused and where potentially material impacts and dependencies lie across operations, sectors, and value chains.

L1 Span of the business model and value chain

L2 Dependency and impact screening

L3 Interface with nature

L4 Interface with sensitive locations

Key question

Where are the sectors, value chains and direct operations with potentially moderate and high dependencies and impacts located?
Which biomes and specific ecosystems do our direct operations, and moderate and high dependency and impact value chains and sectors, interface with?

Considerations	Approaches and Actions
Identify all moderate/high impact and dependency sectors and value chains, pulling information from L2 assessment. To help frame this section, think about the 'embodied ecological/ biodiversity impacts' associated with the operations, sectors, and value chains screened in L2. For further guidance on embodied impacts, refer to: • UKGBC Embodied Ecological Impacts Knowledge Hub • Expedition's Embodied Biodiversity Impacts of Construction Materials For construction activities, consider: • Location of active development sites • Location of proposed/future development sites • Provenance of products / materials used • Supplier • Point of origin (i.e., region / country) • Material flows and provenance of products / materials (e.g., UK import locations for minerals or construction materials) • Over time, organisations should work to understand the specific locations that products/ materials come from, i.e., 'locating' value chain interfaces For standing asset management activities, consider: • Location of assets (owned) • Location of assets (managed) • Provenance of moderate/high impact and dependency products / materials used • Supplier • Point of origin (i.e., region / country) • Material flows and provenance of products / materials (e.g., UK import locations for minerals or construction materials) For investments, consider: • Location of real asset investments • The activities of moderate/ high impact and dependency funds, i.e., what sectors, industries, businesses are being invested in, and which biomes/ ecosystems are their activities likely to be operating in/ impacting on	Review your potentially moderate and high impacts and dependencies (L2) For UK-based construction activities and standing assets: • Evidence gathered to secure planning can be reviewed, such as Preliminary Ecological Appraisals, Environmental Impact Assessments, Habitats Regulations Assessments, Biodiversity Net Gain Assessments, etc. Such planning documents will include an assessment of habitat and species records within the red line boundary and wider zone of influence (typically up to 2km from the asset) • Over time, organisations should extend the zone of influence to consider the interconnectedness of ecosystems and how they can support Local Nature Recovery Strategies (LNRS) and the Nature Recovery Network • Where available, biodiversity baselines established to support corporate biodiversity strategies can be reviewed: • Such assessments should identify habitats in line with the UKHab Classification, establishing quantitative baselines of biodiversity value in 'Biodiversity Units' in line with best practice and the methodology of the Statutory Biodiversity Metric • The GIS mapping process outlined in L1 can be used to support this approach For associated value chains: • For the potentially moderate/ high dependency and impact value chains and sectors (identified in L2), information regarding the location of operations will be necessary, supported by supply chain mapping, engagement with suppliers, and Life Cycle Assessment (LCA) • It is likely that requests of information will be needed throughout the supply chain, from the point of purchase through to distribution, manufacture, production, extraction, etc. • Factor such requests and correspondence into disclosure production timelines and resourcing considerations. • Materials Passports and/ or Environmental Product Declarations (EPDs) can provide insights into the provenance and associated embodied ecological impacts of products/ materials procured. • Where such information is unknown, but there are potential moderate/ high impacts and dependencies associated with the product/ material, an LCA should be undertaken.

Considerations	Approaches and Actions
	• Undertaking LCAs for construction and fit-out materials and other commodities purchased/ used via standing asset management activities can provide further insight into the upstream and downstream value chain and its geography. For investments: • Follow the above steps, reviewing the location of real asset investments and reviewing the interactions of those associated with potentially moderate/ high dependencies and impacts • With an understanding of interaction types, the biomes/ ecosystems that are likely to be associated with these interactions can be considered in more detail. • Referring to TNFD guidance on biomes will help to support this high-level assessment.

L1 Span of the business model and value chain

L2 Dependency and impact screening

L3 Interface with nature

L4 Interface with sensitive locations

Key question

For our organisation's activities in moderate and high dependency and impact value chains and sectors, which of these are in ecologically sensitive locations? And which of our direct operations are in sensitive locations?

Considerations	Approaches and Actions
Building on the assessments undertaken in L1 - L3, assess whether activities are geographically located in ecologically sensitive locations: • Anywhere in the direct operations; and • In the assessed moderate and high dependency and impact value chains and sectors Sensitive locations are defined by the TNFD as: • Areas important for biodiversity, including species; and/or • Areas of high ecosystem integrity; and/or • Areas of rapid decline in ecosystem integrity; and/or • Areas of high physical water risks; and/or • Areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders Within a UK context, ecologically sensitive locations could include:[29] • Internationally or European protected sites: • Special Areas of Conservation (SACs) • Special Protection Areas (SPAs) • Ramsar wetland • Potential SPA, possible SAC or proposed Ramsar wetland • Nationally protected sites: • Sites of Special Scientific Interest (SSSIs) • Marine Conservation Zones (MCZs) Locally protected sites: • Local Nature Reserves • Local Wildlife Sites • Local Geological Sites • Protected areas: • National Parks or the Norfolk and Suffolk Broads • Areas of Outstanding Natural Beauty • Heritage Coasts • Non-Statutory Designations: • Protected Landscapes • Non-statutory Local Sites • Local Wildlife or Geological Sites • County Wildlife Sites • Sites of Importance for Nature Conservation • Sites of Biological Interest In L4, establish a list of 'priority locations' for disclosure (in line with Strategy D), which is the sum of 'material locations' (where material nature-related dependencies, impacts, risks, and opportunities have been identified) and 'sensitive locations' (such as those defined above)	As noted in L3, for the direct operations of UK-based construction and standing asset management activities, this information should be available or have been flagged via the planning process If this information is not readily available (perhaps because of the age of certain standing assets, for example), then ecological records centres can provide proximity analyses and reports for a range of buffers, from 1km, 2km, and beyond Authoritative geographic information relating to the UK's natural environment can be sourced using the MAGIC Map For non-UK based construction activities and standing assets, location information will need to be collated (see L1 Approaches and Actions) Proximity to ecologically sensitive locations can be assessed remotely, using a range of datasets and interactive mapping tools, many of which are open access. The following tools are recommended by the TNFD in their LEAP guidance: [30] • Global Map of Ecoregions • Integrated Biodiversity Assessment Tool (IBAT) • Critical Habitat Screening Layer (UNEP-WCMC) • Ocean+ • Global Forest Watch • Trends.Earth • HabitatMapper • Resource Watch

What are the desired outputs of the Locate stage?

For corporates

- A list of potentially material activities in the business model and value chain
- A list and / or map of assessment locations
  - Including all locations where the organisation has activities and/ or assets in its direct operations and value chains that meet the TNFD criteria for sensitive locations (L4).
  - Other locations where the organisation has potentially material nature-related dependencies, impacts, risks and opportunities.

For financial institutions

- A heatmap of potentially material sectors (L2).
- High-level geographies of potentially material sectors, and analysis of the types of ecosystem or biome likely to be associated with these sectors and geographies (L3).
- An analysis (most likely by portfolios) of its clients/ investees' interface with sensitive locations.

Mapping the Locate stage to the TNFD disclosures

The Locate stage is principally about identifying specific areas where their operations, supply chains, or investments intersect with nature. This can support with the preparation of disclosures for section Strategy (D) under the TNFD Framework, as well as laying the groundwork for other sections.

	Governance			Strategy				Risk and Impact Management				Metric & Targets		
	A	B	C	A	B	C	D	A(i)	A(ii)	B	C	A	B	C
Locate														

Stage 2: Evaluate

The Evaluate stage involves analysing the nature-related interactions identified in the Locate stage to determine their materiality to the organisation. This means assessing the significance of the dependencies on natural ecosystems, such as water, soil, or biodiversity, and the impacts the organisation has on these systems. This evaluation considers factors like the potential for resource depletion, environmental degradation, and the effects of regulatory changes. By understanding which nature-related issues are material, organisations can prioritize their efforts and focus on the areas that pose the greatest risk or offer the most significant opportunities.

Sub-stages

E1
Identification of environmental assets, ecosystem services and impact drivers

What are the sectors, business processes or activities to be analysed?

What environmental assets, ecosystem services and impact drivers are associated with these sectors, business processes, activities and assessment locations?

E2
Identification of dependencies and impacts

What are our dependencies and impacts on nature?

E3
Measurement of dependences and impacts

Dependency measurement - what is the scale and scope of our dependencies on nature?

Impact measurement - what is the severity of our negative impacts on nature?

What is the scale and scope of our positive impacts on nature?

E4
Determination of impact materiality

Which of the identified impacts are material?

Desired outputs

For corporates

- A list of relevant environmental assets, ecosystem services and impact drivers mapped to business activities and/or assessment locations (from E1).
- A list of the organisation's dependencies and impacts on nature by assessment location, with a description of the dependency and impact pathway, including impact drivers, external factors, relevant ecosystem services and actual or potential changes in the state of nature (from E2).
- Evaluation of material dependencies and impacts on nature, consistent with the impact materiality approach and reporting requirements of GRI and ESRS in the European Union.
- As part of this assessment, the organisation will have produced a set of indicators and associated metrics (from E3 and E4).

For financial institutions

- A list of environmental assets, ecosystem services and impact drivers by portfolio sector identified in the heatmapping exercise in the Locate phase.
- A list of the portfolio companies/activities in these sectors mapped to their dependencies and impacts on nature.
- An enhanced list of these companies/activities mapped against data on the scale of their dependencies and impacts, taking account of their management and mitigation efforts.

E1 Identification of environmental assets, ecosystem services and impact drivers

E2 Identification of dependencies and impacts

E3 Measurement of dependences and impacts

E4 Determination of impact materiality

Key question

What are the business processes and activities to be analysed?
What environmental assets, ecosystem services and impact drivers are associated with these business processes, activities and assessment locations?
What are the companies/ activities in our portfolios that are in sectors, geographies and sensitive locations identified?
What are the environmental assets, ecosystem services and impact drivers associated with these companies/activities?

Considerations	Approaches and Actions
The previous Locate stages should have identified: • A list of potentially material activities in the business model and value chain, i.e., commodities and processes (L2) • High-level geographies of potentially material sectors, and analysis of the types of ecosystem or biome likely to be associated with these sectors and geographies (L3) • A list and/or map of assessment locations, 'sensitive locations,' 'material locations,' and 'priority locations' (L4) This will form the basis of what needs to be analysed further to understand the magnitude or significance of any potential impacts or dependencies. Consider the processes associated with potentially material activities and defined priority locations (including both direct operations and value chain activities). Build upon the information collated in the impact/ dependency screening exercise here (e.g., Appendix F) and consider associated 'impact drivers' Impact drivers can be categorised by respective drivers of nature change, as follows: • Land/ freshwater/ ocean-use change • Land-use change • Freshwater-use change • Ocean-use change • Climate change • Greenhouse gas emissions • Resource use/ replenishment • Water use • Other resource use • Pollution/ pollution removal • Non-GHG air pollution • Water pollution • Soil pollution • Waste • Disturbances • Invasive species and other • Biological alterations The above list is not exhaustive, and organisations can and should refer to the Natural Capital Protocol for further guidance on impact drivers	Organisations can use multiple tools including ENCORE and SBTN's Materiality Screening Tool to provide further insight into which impact drivers are associated with which processes/ sectors According to the TNFD's LEAP guidance: "Organisations can start with the sectors, activities and value chains identified in L2, or the assessment locations identified in L3 and L4, or do both in parallel. If starting with sectors, activities and value chains, organisations should move to location-specific analysis as they proceed through the Evaluate phase, identifying specific environmental assets their activities interface with." [31] Map potentially material activities (i.e., those identified in Locate) against associated impact drivers. Splitting these by stages in the value chain (i.e., upstream, direct operations, and downstream) will help to simplify the activity-mapping process

E1 Identification of environmental assets, ecosystem services and impact drivers

E2 Identification of dependencies and impacts

E3 Measurement of dependences and impacts

E4 Determination of impact materiality

Key question
What are our dependencies and impacts on nature?

Considerations	Approaches and Actions
With impacts and dependencies identified at a high-level (L2 / E1), consider: • The external factors influencing impact (and dependency), both human and natural • The ecosystem services that an organisation and value chain depend upon (E1) • How these impact drivers and external factors can influence the state of nature and consequently ecosystem service provision for the organisation and others (i.e., consider the impact and dependency pathways) Changes to the 'state of nature' refer to changes to: • The condition and extent of ecosystems; and • Species population size and extinction risk Organisations should also consider external factors that already affect, or could affect, the state of nature and the environmental assets and ecosystem services on which they depend External factors are the natural and/ or human activities outside of the organisation that affect the state of nature. Some illustrative examples include: • A forest fire caused by climate change or exacerbated due to forest mismanagement by another company could affect the availability of timber within the supply chain, leading to delays and/or inflated costs • Upstream deforestation driven by agricultural activities could undermine the flood resilience of assets located downstream, increasing flood risk • Downstream mismanagement of biodiverse green roofs on a leased asset could undermine its flood and heat resilience, and lead to both remedial costs and increased exposure to flood and heat risk • Changes in the state of nature via the organisation's activities and impact drivers or wider external factors can affect the condition of the environmental asset and the flow of ecosystem services from it, which influences dependencies and impacts The relationship between these factors is referred to as a dependency and impact pathway.	Qualitatively describe your impact and dependency pathways Impact pathways are characterised by: • Impact drivers (and external factors where relevant/ understood), leading to; • Changes to the state of nature (resulting from identified impact drivers), leading to; • Changes in the provision of ecosystem services to others (resulting from changes in the state of nature) Dependency pathways are characterised by: • External factors (and impact drivers where relevant), leading to; • Changes to the state of nature, leading to; • Changes in the provision of ecosystem services to the organisation The TNFD LEAP guidance states that:[32] "E2 should conclude with the LEAP assessment team having a list of dependencies and impacts – by location for corporates; and by sectors or geographies for financial institutions and for specific geographic locations where possible – ranked on a high/medium/ low qualitative scale." You can: • Start with a generic assessment, using the information from the initial materiality screening exercise (L2) • Bring in location-specific information, i.e., your interfaces with sensitive locations (L4) • Describe the associated dependencies and impacts qualitatively, before quantifying (E3)

E1 Identification of environmental assets, ecosystem services and impact drivers

E2 Identification of dependencies and impacts

E3 Measurement of dependences and impacts

E4 Determination of impact materiality

Key question

Corporates: What is the scale and scope of our dependencies on nature?
What is the severity of our negative impacts on nature?
What is the scale and scope of our positive impacts on nature?
Financial Institutions: What is the scale and scope of our dependencies on nature as a result of the dependencies of our portfolio companies?
What is the severity of their negative impacts on nature?
What is the scale and scope of their positive impacts on nature?

Considerations	Approaches and Actions
To measure the scale and scope of dependencies and impacts on nature, understanding dependency and impact pathways is essential Where UK real estate organisations have an active corporate biodiversity strategy or biodiversity action plans in place for standing assets, an assessment of any subsequent net gains delivered can be used to assess the scale and scope of 'positive impacts on nature' (that is, the direct, positive impacts related to land-use change only) For construction and standing asset management activities, consider: • How to begin to quantify impact drivers, subsequent changes to the state of nature, and changes to ecosystem service provision (both in 'direct' and 'indirect' interaction areas, as defined via L2) See TNFD core metrics C1.0 - C5.0 and additional metrics A1.0 - A6.1 for guidance on suitable indicators and metrics (TNFD Recommendations, Annex 1, Pages 81 - 92) The timing, extent and likelihood of the dependency or impact, and risk of possible tipping points in locations material to the business model and value chain (as defined in L4) What nature-related strategies and action plans you already have in place (e.g., existing corporate biodiversity strategies/ biodiversity action plans/ etc.) For investments, consider: • What additional information required from portfolio companies and/ or external data providers • What risk management and mitigation strategies are currently in place across portfolio companies	There are a range of different methods and approaches that can be taken to measure changes to the state of nature. For UK-based activities, such changes can be measured using: • Statutory Biodiversity Metric (biodiversity and habitat focus) • Environmental Benefits from Natural Tool (ecosystem service focus) • Natural Capital Assessment and Accounting (recommends a range of tools) • Environmental DNA (eDNA) assessments and monitoring With regards to the application of the Statutory Biodiversity Metric: • Use of the Metric, and adherence to - or exceedance of - the mandatory minimum planning requirements (in England) will ensure that measurable net gains in biodiversity value are delivered via new construction[vi] • The Metric can also be applied to measure changes in the extent and condition of ecosystems on standing assets, as a result of any ecological enhancement activities (such as those driven by, for example, corporate biodiversity targets and KPIs) Assessing dependencies and impacts associated with changes to the state of nature more broadly involves: • Measuring changes to extent of ecosystems I.e., their quantity • Measuring changes to the condition of ecosystems I.e., their quality • Measuring changes to species population size I.e., their biodiversity • Measuring changes to species extinction risk To support evaluation of nature-related dependencies and impacts, the TNFD Recommendations have defined a set of core global disclosure indicators and metrics Core metrics operate on a comply/ explain basis by issue identified/ material location. If a metric is not reported, it should be because: • It is not relevant (which should be explained), or; • There is not enough data to support it (which should be obtained, with a plan put in place to gather that data)

vi The Statutory Biodiversity Metric will only apply to England as a formal planning tool; however, the Metric uses the UK Habitat Classification (UKHab) system, which is applicable to all terrestrial and intertidal habitats in the UK and aligns with much of the European habitat classification system (EUNIS).

Considerations	Approaches and Actions
When reviewing, selecting, and/ or developing indicators and metrics to assess your impacts and dependencies, consider: • What is intended to be measured • What type of valuation is feasible or possible given data, information, and/or tool availability • How the indicator/ metric will support positive action (i.e., how, beyond measurement and inclusion in a disclosure, will it encourage or enable positive changes to be made and tracked over time)	It is likely that UK real estate companies will have sufficient data and information regarding their construction and management activities to disclose against the following core metrics: • C1.0 - Total spatial footprint (sum of):[vii] • Total surface area controlled/ managed by the organisation, where the organisation has control (km^2) • Total disturbed area (km^2) • Total rehabilitated/restored area (km^2) • C1.1 - Extent of land/ freshwater/ ocean use change • Extent of land/freshwater/ocean ecosystem use change (km^2) by:[viii] • Type of ecosystem • Type of business activity • Extent of land/freshwater/ocean ecosystem conserved or restored (km^2), split into: • Voluntary • Required by statutes or regulations • C2.2 - Waste generation and disposal • C4.0 - Measures against unintentional introduction of invasive alien species (IAS) Other core metrics, such as 'C2.0 - Pollutants released to soil split by type' will be less relevant to, for example, standing asset management activities, but more so for new construction activities. Whether such information will be available at present, or will need to be incorporated into environmental assessments, will depend on the existing environmental assessment and reporting processes of the organisation.[ix] As noted above, organisations will need to explain the irrelevance of disclosing against this metric or outline a plan for generating the relevant data to comply, if it is not already available The TNFD has also proposed a suite of disclosure indicators/ metrics for assessing ecosystem extent and condition for 'Engineering and construction services',' Home builders', 'Real estate', and 'Real estate service' sectors. The indicators/ metrics proposed could be applied to a standing asset portfolio. They include:[33,x] • Green plot ratio • Urban greening factor • Area of tree planting (m^2) • Area of a building on which plants are planted (m^2) • Share of area above threshold for normalised difference vegetation index • Number of areas of sections of planted trees of more than $100m^2$ created Assessing dependencies and impacts associated with changes in ecosystem service provision is complex, though can be broken down by specific ecosystem service type, i.e., provisioning, regulating, and cultural. The following are a selection of illustrative indicators cited in the TNFD LEAP Guidance (Page 82): • Provisioning • Weight of provisioned assets • Water withdrawal • Regulating • Area of habitat providing services • Number of properties in low (flood-)risk categories • Tonnes of Green House Gas (GHG) retained • Cultural • Number of visits for cultural purposes

vi The land footprint under the core global disclosure metric should include land owned, leased or managed.
vii Land-use change reported under the core global disclosure metric should distinguish land-use changes by original land uses: brownfield sites, greenfield sites, developed land, undeveloped land, farmland, wetland, etc.
ix The TNFD LEAP Guidance also includes a range of suggested assessment metrics and indicators for impact drivers and ecosystem services (see Annex 1, Pages 158 - 175). These include both 'core' indicators and metrics for inclusion in a disclosure, as well as those that are 'additional.'
x As per the draft sector-specific disclosure metrics defined by the TNFD.

Considerations	Approaches and Actions
	For construction and standing asset management activities, key indicators and metrics for evaluating the scale and scope of dependencies and severity of impacts in the value chain will relate to resource use. The TNFD LEAP Guidance defines the following: • Quantity of high-risk natural commodities sourced from land/ ocean/ freshwater (Indicator) • Quantity of high-risk natural commodities (tonnes) sourced from land/ocean/freshwater, split into types, including proportion of total natural commodities (Metric) • Quantity of high-risk natural commodities (tonnes) sourced under a sustainable management plan or certification programme, including proportion of total high-risk natural commodities (Metric) The TNFD has also proposed a core disclosure list for construction-related commodities, which includes:[34] • Natural commodities: aluminium, copper, gypsum, iron, lead, sand and timber • Manufactured commodities: brick, cement, concrete, carpet, glass, insulation products, rubber and steel When thinking about value chain impacts and dependencies, review impact/ dependency screening exercise (L2), and sense check resource use against the SBTN's High Impact Commodity List and Materiality Screening Tool Further proposed metrics relating to resource use via construction activities include:[35] • Proportion of materials used that are recycled and reused input materials by significant categories of raw materials, renewable materials and manufactured products (%) • Share of total mass of materials, products and components/ systems for the new build/ refurbishment/ fit-out that have been reused, repurposed or remanufactured, either from the building undergoing demolition, refurbishment, fit-out or from other buildings, third parties etc. (%). For indirect impact drivers associated with UK-based construction activities, assessing impacts upstream will require the aggregation of multiple data layers and/ or the use of novel measurement methodologies and modelling systems. To assess extent, condition, population size, etc., indicators such as Mean Species Abundance (MSA) or Ecosystem Integrity Index (EII) can support assessment, via the analysis of secondary data layers. With regards to value chain impacts (e.g., those associated with construction material production) seek to understand the 'biodiversity footprint'. Measurement methodologies such as Bioscope, ReCiPe, or EXIOBASE apply a range of approaches from model-based footprinting, to Life Cycle Assessment, and Environmentally-Extended Multi-Regional Input-Output models, respectively. These tools can help to assess value chain impacts with relatively simple data inputs (i.e., £ spend), though the outputs can limit their applicability to the LEAP and TNFD disclosure process. As the intention is to identify and evaluate dependencies and impacts to establish parameters to reduce them, then outputs need to be easily comprehensible and clearly linked to specific mitigative or adaptive actions taken. At present, these measurement methodologies do not lend themselves to this ongoing performance measurement (P2) in a way that is nuanced enough to account for the types of actions UK real estate organisations can/ will take.

E1 Identification of environmental assets, ecosystem services and impact drivers

E2 Identification of dependencies and impacts

E3 Measurement of dependences and impacts

E4 Determination of impact materiality

Key question
Which of our impacts are material?

Considerations	Approaches and Actions
Assessing impact materiality is essential to align disclosures with: • Global Reporting Initiative (GRI) Standards • Sustainable Finance Disclosures Regulation (SFDR) requirements (i.e., mandatory Principle Adverse Impacts (PAIs) relating to biodiversity) • Corporate Sustainability Reporting Directive (CSRD) guidance and European Sustainability Reporting Standards (ESRS) • ESRS E1 - E5 • ESRS E4 - Biodiversity & Ecosystems	By this stage, the following will have been achieved: • Identified the environmental assets, ecosystem services and impact drivers (E1) associated with potentially moderate/ high value activities (both in direct operations and across the value chain) • Defined impact and dependency pathways (E2), connecting the dots between specific impacts drivers and external factors, related changes to the state of nature, and the resulting changes in provision of ecosystem services to the organisation and others (i.e., society more broadly) • Assessed the scale and scope of impacts and dependencies (E3), beginning to measure and quantify those that have been prioritised With this information, make an informed decision about what the most significant impacts are and can prioritise them for inclusion in reporting. Exactly what is material will be informed by the approach to materiality, defined when scoping the LEAP process When prioritising impact drivers, think about their significance in terms of: • The characteristics of the impact driver, including: • Spatial extent • Frequency • Duration • Magnitude • The characteristics of biodiversity, including: – Exposure – Sensitivity to impact driver(s)

What are the desired outputs of the Evaluate stage?

For corporates

- A list of relevant environmental assets, ecosystem services and impact drivers mapped to business activities and/or assessment locations (from E1).
- A list of the organisation's dependencies and impacts on nature by assessment location, with a description of the dependency and impact pathway, including impact drivers, external factors, relevant ecosystem services and actual or potential changes in the state of nature (from E2).
- Evaluation of material dependencies and impacts on nature, consistent with the impact materiality approach and reporting requirements of GRI and ESRS in the European Union.
- As part of this assessment, the organisation will have produced a set of indicators and associated metrics (from E3 and E4).

For financial institutions

- A list of environmental assets, ecosystem services and impact drivers by portfolio sector identified in the heatmapping exercise in the Locate phase.
- A list of the portfolio companies/activities in these sectors mapped to their dependencies and impacts on nature.
- An enhanced list of these companies/activities mapped against data on the scale of their dependencies and impacts, taking account of their management and mitigation efforts.

Mapping the Evaluate stage to the TNFD disclosures

The Evaluate stage can support with the preparation of disclosures for section under the Strategy, Risk & Impact Management and Metrics and Targets pillars of the TNFD Framework.

	Governance			Strategy				Risk and Impact Management				Metric & Targets		
	A	B	C	A	B	C	D	A(i)	A(ii)	B	C	A	B	C
Evaluate				■			■	■	■	■			■	

Stage 3: Assess

In the Assess stage, organisations delve into the financial implications of their nature-related dependencies and impacts. This involves quantifying the risks, such as the potential costs of environmental damage, disruptions to supply chains, or compliance with emerging regulations. It also includes evaluating opportunities, like enhanced reputation, cost savings from sustainable practices, or new revenue streams from nature-positive initiatives. This stage translates environmental risks and opportunities into financial terms, enabling organisations to integrate them into their overall risk management and strategic planning process.

Sub-stages

A1
Risk and opportunity identification

What are the corresponding risks and opportunities for our organisation?

A2
Adjustment of existing risk mitigation and risk and opportunity management

What existing risk mitigation and risk and opportunity management processes and elements are we already applying?

How can risk and opportunity management processes and associated elements (e.g. risk taxonomy, risk inventory, risk tolerance criteria) be adapted?

A3
Risk and opportunity measurement and prioritisation

Which risks and opportunities should be prioritised?

A4
Risk and opportunity materiality assessment

Which risks and opportunities are material and therefore should be disclosed in line with the TNFD recommended disclosures?

Desired outputs

- A longlist of relevant nature-related risks and opportunities for the organisation.
- A matrix of risks consistent with the enterprise risk management framework of the organisation (e.g. significance by sector, business line, location and value chain).
- A shortlist of material nature-related risks and opportunities.
- A list of priority locations.
- An outline of the process followed to identify existing risk mitigation and risk and opportunity management processes and elements and a set of recommendations for senior management to consider regarding the adaptation and improvement of these processes and elements to integrate nature-related risks and opportunities.

A1 Risk and opportunity identification

A2 Adjustment of existing risk mitigation and risk and opportunity management

A3 Risk and opportunity measurement and prioritisation

A4 Risk and opportunity materiality assessment

Key question
What are the corresponding risks and opportunities for our business?

Considerations	Approaches and Actions
The TNFD guidance defines nature-related risks in the following categories: • Physical (acute, i.e., short-term or event-based/ chronic, i.e., long-term) • Transitional (relating to policy/ legislation, markets, reputation, or technology) • Systemic (i.e., ecosystem stability risk (e.g., tipping points) and/ or financial stability risk (e.g., market destabilisation)) By comparison, opportunities 'encompass a wide range of actions, such as the protection and management of ecosystems, the incorporation of green and blue infrastructure in urban areas, and the application of ecosystem-based principles to agricultural systems' Opportunities exist for UK real estate organisations to benefit from: • Enhanced property performance (e.g., by addressing related physical risks) • Alignment with existing and forthcoming standards, conditions, and legislative requirements (e.g., by addressing related transitional risks) • Leveraging novel finance mechanisms linked to the actioning of outcomes related to the above (e.g., via performance against sustainability-linked loans relating to delivery of BNG) Opportunities can broadly be considered in terms of those relating to direct operations (i.e., construction and standing asset management), to the value chain, or investments Direct opportunities • Via improvement of biodiversity through development and asset management related activities. Where existing corporate biodiversity strategies have been developed, establishing baselines and targets for improvement, many of these opportunities will already be identified. Where such strategies are absent, opportunities for construction and standing asset management exist in the form of delivery of BNG above the minimum regulatory standard	Exposure to a nature-related risk and/ or opportunity will be informed by: • The location of operations (i.e., construction activities/ standing assets) in 'priority locations' (as defined in L4) • Dependencies and impacts on nature (as described and assessed in E2 and E3) With L4, E2, and E4 insights, begin defining risk profiles: 1. Dependency-based risks are informed by: • Reliance on ecosystems/ ecosystem services • Resilience of those ecosystems/ ecosystem services which are relied upon • Nature of any risk mitigation strategy 2. Impact-based risks are informed by: • Magnitude of impacts • Significance of impacts • Nature of any risk mitigation strategy The characteristics of the impact- and dependency-based risk profiles will then inform overall nature-related risks When thinking of the financial materiality of these risks, there are a number of key 'transmission channels' through which nature-related risks can become financial risks to the business. Identifying and working to avoid, mitigate, and manage these nature-related risks can be framed as seizing nature-related opportunities, whether that is through: • Conservation, restoration, or Nature- based Solutions (NbS) initiatives on assets under direct control or management, or via investment in off-site projects (e.g., investment in upland afforestation initiatives to restore nature and address identified flood risks downstream) • Strategic transformation of business models resulting in less nature degradation through direct operations or value chain activities (e.g., identification of High Impact Commodity sourced from 'priority location' and revision of procurement strategy to manage/ mitigate associated reputational risks)

Considerations	Approaches and Actions
Indirect opportunities: • Markets: Changing dynamics in overall markets, such as access to new markets or locations, which arise from other opportunity categories as a result of changing conditions, including consumer demands, consumer and investor sentiment and stakeholder dynamics I.e., emergent nature markets • Capital flow and financing: Access to capital markets, improved financing terms or financial products connected to positive nature impacts or the mitigation of negative impacts • Products and services: Value proposition related to the creation or delivery of products and services that protect, manage or restore nature, including technological innovations e.g., habitat banking opportunities • Resource efficiency: Actions an organisation can take within its own operations or value chain in order to avoid or reduce impacts and dependencies on nature (e.g., by utilising fewer natural resources), whilst achieving co-benefits such as improved operational efficiency or reduced costs (e.g., micro irrigation which maximises plant health, reduces water use and reduces costs) • Reputational capital: Changes in perception concerning a company's actual or perceived nature impacts, including the consequent impacts on society and engagement of stakeholders • Sustainable use of natural resources: Substitution of natural resources by recycled, regenerative, renewable and/ or ethically responsibly sourced organic inputs • Ecosystem protection, restoration, and regeneration: Activities that support the protection, regeneration or restoration of habitats and ecosystems, including areas both within and outside the organisation's direct control e.g., off-site BNG contributions supporting delivery of Local Nature Recovery Strategies across England	

A1 Risk and opportunity identification

A2 Adjustment of existing risk mitigation and risk and opportunity management

A3 Risk and opportunity measurement and prioritisation

A4 Risk and opportunity materiality assessment

Key question

What existing risk mitigation and risk and opportunity management processes and elements are we already applying?

How can risk and opportunity management processes and associated elements (e.g. risk taxonomy, risk inventory, risk tolerance criteria) be adapted?

Considerations	Approaches and Actions
When integrating nature-related risks and opportunities into existing frameworks, consider: • Location-specificity (as outlined in Locate and Evaluate) • Interconnections between functions, departments, and individuals internally • Temporal orientation, i.e., short-, medium-, long-term timeframes • Proportionality in the context of other risks, the materiality of exposure, and imperfections in strategy • Consistency in applied methodology to support clear analysis Just as climate-related risks possessed unique characteristics to consider,[36] so too do nature-related risks: • Context-specificity • Different effects based on location, geography, ecology, climate, and nature of activities • Horizons • Different time horizons, both short and long-term effects • Novel and uncertain nature • Complex, dynamic, and interrelated nature of impacts and dependencies • Changing magnitude and non-linear dynamics • Risks may manifest at different scales over time, i.e., ecological tipping points, extinctions, and long-term (possibly irreversible) changes • Complex relationships and systemic effects • Interconnectedness of 'nature' with global socioeconomic and financial systems The TNFD recommends that assessments of nature-related risks should recognise the connections and feedback loops with climate-related risks (e.g., risks associated with increased temperatures, droughts or floods that are increased by nature loss) A number of UK real estate organisations will have produced, or will have begun producing, TCFD reports. Organisations should look to connect their nature-related risk and opportunity assessment to their climate-related risk assessment to understand synergies, trade-offs and mutually reinforcing risks and opportunities E.g., using NbS to adapt to physical climate risks identified within an existing TCFD report would demonstrate how a nature-related opportunity can address a climate-related risk, such as flooding or overheating.	Looking internally: • Review existing internal risk management procedure and strategy • Review existing risk management processes and identify relevant key stakeholders within the organisation Review the TNFD's Risk Register Worksheet and use the template to guide the risk and opportunity assessment and review throughout the Assess stage. Align with the risk integration process defined by the TCFD (adapted for TNFD below): [37] 1. Ensure there is a general understanding across the company of nature-related impacts and dependencies concepts and their potential impacts. See the 'TNFD in a Box' resource for upskilling 2. Identify the specific risk management processes and elements that may need to be adjusted for the integration of nature-related risk as well as the functions and departments responsible for those processes and elements 3. Incorporate nature-related risks into the existing risk taxonomy and risk inventory used in the company. This includes mapping nature-related risks to existing risk categories and types 4. Adapt existing risk management processes and key elements based on information gained in the previous steps and the unique characteristics of nature-related risk as understood through the Locate, Evaluate, and Assess stages There are a number of further risk assessment actions that could be considered, including: • High-level targets and strategies: – Risk assessments could help determine which dimensions are appropriate and realistic for target setting and inform metrics to monitor progress towards reducing exposure to nature risks. Other strategic action could involve engaging with industry initiatives to make business models evolve collectively

Considerations	Approaches and Actions
	• Executive and organisational enablers: – Risk assessment methods are powerful tools to raise awareness throughout the organisation and with board members to explain strategic choices. The exercise could also compel talent management teams to provide staff with trainings on the topic of nature, and if nature-related targets are set, integrate these into portfolio managers' and/ or executives' compensation as well – I.e., just as internal renumeration schemes can be applied to delivering against opportunity-related targets (such as meeting BNG% targets on new developments or delivering uplifts across the standing portfolio), so too can they be devised for risk-related targets – Exercises such as these could also provide evidence to support responses to the Governance disclosure pillar • Asset manager engagement: – Asset owners could start conversations with asset managers to encourage establishment of nature-related risk management processes and emphasize the importance of producing nature-related disclosures • Overall risk management: – Risk assessments could inform the development of exclusionary policies for certain sectors, activities or geographies as well as define metrics against which to track progress. Risk assessment insights can trigger an organisation-wide discussion about risk limits and risk appetite • Strategic portfolio allocation: – This could entail divestment or diversification from sectors and geographies identified to be high risk or directing capital to new sectors or businesses identified to be making a positive contribution to nature • Deal due diligence: – Nature-related considerations could be incorporated into due diligence processes to refine the valuation and inform value creation plans – For example, in England, obtaining an understanding of what habitats are present on a site prior to purchase could help to avoid costly off-site BNG compensation that may be associated with proposed developments • Engagement with portfolio companies: – Asset tagging or scenario-based risk assessment exercises could help prioritise portfolio companies to engage with on the management of nature-related risks and opportunities and also help prioritise specific dependencies and impacts for active engagement (see A3) • Exit strategies: – Nature-related risks can help prioritise companies for early exit, and nature-related opportunities that can be captured by companies could be used as value creation levers to maximise the value of investments pre-exit

A1 Risk and opportunity identification

A2 Adjustment of existing risk mitigation and risk and opportunity management

A3 Risk and opportunity measurement and prioritisation

A4 Risk and opportunity materiality assessment

Key question
Which risks and opportunities should be prioritised?

Considerations	Approaches and Actions
When prioritising risks, it is recommended that organisations consider: • • Vulnerability (to impact/ dependency/ risk) • • Speed of onset (of impact/ dependency/ risk) • • Severity (or scale and scope) of impact on nature • • Impact to society The TNFD outlines three methods for locating and assessing nature-related risks, they are: 1. Heatmapping 2. Asset tagging 3. Scenario-based risk assessment These methods build on each other and can be deployed in sequence when applying LEAP iteratively: Heatmapping is akin to the high-level interaction area, impact, and dependency process undertaken during the Locate stage. It provides a relatively quick and simple way of identifying where risks are in the business E.g., identifying potentially moderate/ high dependency and impact sectors, activities, or commodities (as per E2) and mapping on a materiality matrix Asset tagging can 'zoom in' on specific sectors, dependencies, and impacts, as identified by the heatmap to provide further insight into how much risk there is Scenario-based risk assessment explores the financial implications of nature risk in different scenarios and can be used to raise awareness or inform proactive risk management actions E.g., scenarios can be used to inform decisions regarding divestment, diversification, or capital allocation (such as investment in NbS)	1. Heatmapping When heatmapping, organisations can use tools such as ENCORE, the SBTN Materiality Screening Tool, the SASB Materiality Finder, or GRI's Sector Program to assess exposure of operations and value chain activities to nature-related risks. See Appendix B for materiality screening (or 'heatmapping' of sectors, industries, and production processes associated with UK real estate interaction areas. 2. Asset tagging • • When asset tagging, organisations can assess their exposure to nature-related dependencies and impacts through qualitative, quantitative or location-based metrics. • This approach can help to identify individual assets, portfolio companies, or commodities with high impacts and/ or dependencies, and which may be associated with nature-related risks • This method supports increased granularity, moving from sector-level considerations to specific processes, products, geographies, and assets • Data will be required on both: – Sectors, processes, products, and locations (comprising that which is deemed 'material' following the Locate and Evaluate stages) – Nature exposure and risk data, linking the above to dependencies, impacts, or risks either qualitatively or quantitatively • Asset tagging can therefore be used to 'zoom in' on those sectors, dependencies, or impacts identified as potentially material in the initial LEAP Scoping phase • There are a range tools that can be used support asset tagging approaches listed on Pages 254 - 258 of the TNFD LEAP Guidance 3. Scenario-based risk assessment The TNFD recommends that risk and opportunity analysis be forward looking, and provides detailed guidance on scenario analysis, including a step-by-step toolkit To support assessment of risks and opportunities and to inform the prioritisation process, the TNFD guidance has defined a suite of risk and opportunity assessment metrics which relate to physical risks, transition risks, and a range of opportunities (see TNFD LEAP Guidance, Table 26, Pages 173 - 178)

Considerations	Approaches and Actions
	In addition, summary metrics can provide an understanding of the overall exposure and/ or potential financial implications of nature-related risks and opportunities to the organisation. Some illustrative summary metrics, as defined by the TNFD, include: • Value of assets, liabilities, revenue and expenses assessed as vulnerable to nature-related physical/ transition risks (total and proportion of total) • Value of assets, liabilities, revenue and expenses exposed to nature-related physical/transition risks (total and proportion of total) • Value of significant fines/ penalties received/ litigation action in the year due to negative nature-related impacts • Value of write-offs and early retirements of assets due to nature-related risks • Value of capital expenditure, financing or investment deployed towards nature-related risks/ opportunities • Value of revenue from products and services producing demonstrable positive impacts on nature • Financial value of nature-related risks/opportunities that could have a substantive financial or strategic impact on the business (maximum, minimum) • % share of revenue exposed to elevated: – physical risks – transition risks • Proportion of assets exposed to risk by categories (physical, transition) and by risk ratings (e.g., very low, low, medium, high, very high, etc.) • Total revenue/value of assets with substantial dependence on ecosystem services or with a high impact on nature • Value/proportion of business activities that have positive impacts on nature (e.g., through nature-based solutions, conservation, restoration) Principally, there are two core criteria underpinning the risk and opportunity assessment and prioritisation process: 1. Magnitude of risk/opportunity 2. Likelihood of risk/opportunity Use exposure and magnitude metrics to assess the financial implications of nature-related risks and opportunities. Exposure metrics are based upon the impacts and dependencies (as defined throughout the Evaluate stage). Magnitude metrics will be informed by the type of risk (i.e., physical, transition, etc.). Magnitude metrics should quantify the financial value of nature-related risks and opportunities for the organisation

Considerations	Approaches and Actions
	Some illustrative examples of magnitude metrics for different risk and opportunity types of relevance to UK real estate include: Physical risk (Acute) • Costs associated with the relocation of operations and suppliers • Reduction in revenue/ costs associated with an interruption of operations/ supply chain • Value of assets/revenue dependent on area • Number of locations/ business lines/facilities exposed Physical risk (Chronic) • Increased costs of natural inputs/ reduced supply • Increased capital expenditure on adaptation e.g. mechanical pollinators • Reduction in revenue/costs associated with interruption of operations/ supply chain • Costs associated with the relocation of operations and suppliers • Costs related to substituting existing products/ services • Value of assets/ revenue dependent on area • Number of locations/ business lines/facilities exposed • Capital expenditure on infrastructure repair/ adaptation • Reduction in revenue/costs associated with interruption of operations/supply chain • Write-offs and early retirement of existing assets • Costs associated with the relocation of operations and suppliers • Value of assets/revenue dependent on area Insurance costs Transition risk (Liability) • Increased costs of personnel and monitoring of activities required Transition risk (Policy) • Increased compliance costs Transition risk (Technology) Transition risk (Market) • Increased research and development expenditure of new and alternative technologies • Increased costs of operations required to achieve nature-related goals • Increased production/raw material costs • Costs related to substituting existing products/services Transition risk (Reputation) • Reduction in revenue due to lower demand for products and services • Costs related to substituting existing products/services Opportunity (Sustainable use of natural resource) • Reduced operational and compliance costs • Increased market valuation through resilience planning • Access to new sources of finance Opportunity (Ecosystem protection, restoration, and regeneration) • Increase in revenue due to improved reputation • Increased market valuation through resilience planning • Access to new sources of finance (e.g., habitat banking)

A1 Risk and opportunity identification

A2 Adjustment of existing risk mitigation and risk and opportunity management

A3 Risk and opportunity measurement and prioritisation

A4 Risk and opportunity materiality assessment

Key question
Which risks and opportunities are material and should be disclosed in line with the TNFD disclosure recommendations?

Considerations	Approaches and Actions
With risks and opportunities measured and prioritised in A3, organisations can make an informed decision as to whether investors and wider stakeholders should be informed via inclusion within a disclosure.	By this stage the following will have been completed: 1. Connected the dots between material impacts and dependencies and corresponding risks and opportunities (A1) 2. Reviewed existing risk mitigation and risk and opportunity management processes within the context of nature-related dependencies, impacts, risks, and opportunities (A2) 3. Produced a shortlist of prioritised risks and opportunities (A3) It will now be possible to determine which risks and opportunities are to be disclosed, which will be influenced by the definition of materiality (i.e., single or double)

What are the desired outputs of the Evaluate stage?

- A longlist of relevant nature-related risks and opportunities for the organisation.
  - The output of this can support reporting on TNFD recommended disclosures (Metrics and targets A).
- A matrix of risks consistent with the enterprise risk management framework of the organisation (e.g. significance by sector, business line, location and value chain).
- A shortlist of material nature-related risks and opportunities.
  - The output of this can support reporting on TNFD Recommended Disclosures (Strategy A).
- A list of priority locations.
  - The output of this can support reporting on TNFD Recommended Disclosures (Strategy D).
- An outline of the process followed to identify existing risk mitigation and risk and opportunity management processes and elements and a set of recommendations for senior management to consider regarding the adaptation and improvement of these processes and elements to integrate nature-related risks and opportunities.

Mapping the Assess stage to the TNFD disclosures

The Assess stage can support with the preparation of disclosures for section under the Strategy, Risk & Impact Management and Metrics & Targets pillars of the TNFD Framework.

	Governance			Strategy				Risk and Impact Management				Metric & Targets		
	A	B	C	A	B	C	D	A(i)	A(ii)	B	C	A	B	C
Assess				■		■	■	■	■	■	■	■	■	

Stage 4: Prepare

The Prepare stage is where organisations develop and implement strategies to manage the nature-related risks and opportunities identified in the previous stages. This includes creating action plans to mitigate risks, such as investing in sustainable practices, enhancing resource efficiency, or diversifying supply chains. It also involves seizing opportunities by aligning business strategies with nature-positive outcomes, such as engaging in biodiversity conservation or developing new products and services that support sustainability. The Prepare stage ensures that organisations are not only aware of their nature-related risks and opportunities but are also equipped to respond effectively, thereby enhancing their resilience and long-term value.

Sub-stages

P1
Strategy and resource allocation plans

What risk management, strategy and resource allocation decisions should be made as a result of this analysis?

P2
Target setting and performance management?

How will we set targets and define and measure progress?

P3
Reporting

What will we disclose in line with the TNFD recommended disclosures?

P4
Presentation

Where and how do we present our nature-related disclosures?

Desired outputs

- Agreement of the board's oversight and management role in assessing and managing nature-related issues.
- The ability to describe the organisation's processes for engaging Indigenous Peoples, Local Communities and affected stakeholders with respect to the assessment of, and response to, nature-related issues and any agreed actions to improve these processes of engagement.
- Agreement of the overall risk and impact management processes relevant to nature-related issues.
- Agreement on the strategic implications of the organisation's nature-related assessment, taking into consideration different scenarios.
- The setting of goals and targets in response to the nature-related assessment.

P1 Strategy and resource allocation plans

P2 Target setting and performance management?

P3 Reporting

P4 Presentation

Key question
What risk management, strategy and resource allocation decisions should be made as a result of this analysis?

Considerations	Approaches and Actions
With insights and evidence gained through the Locate, Evaluate, and Assess stages of the LEAP process, assessors or assessment teams should present the findings to senior management representatives to discuss implications for strategy and resource allocation Considerations should be made for short-, medium-, and long-term plans, and internal discussions should consider implications for the organisations: 1. Strategy 2. Governance processes 3. Risk management processes 4. Resource allocation and financial position Key questions to ask to help frame strategy and resource allocation include: • The integrity of our strategy: – Do the risks and opportunities identified require a fundamental rethink of our corporate or business unit strategy? • Impact on intangibles: – What are the implications of our assessment for the intangibles in our business, including customer loyalty, brand value and reputation? • Regulatory considerations: – What potential implications might changing regulation and government policy have on our ability to operate as a business, our cashflows, our profit margins or our enterprise value? • Community engagement: – How well are we engaging with local communities to shape and co-develop better risk management outcomes, and potentially natural capital solutions, for the ecosystem services on which we have a mutual dependence? • Investor preferences: – What are the attitudes and investment criteria of key capital providers to our organisation? What nature-related risks and opportunities are they assessing?	TNFD recommends the use of the SBTN's mitigation hierarchy - AR3T: 1. Avoid 2. Reduce 3. Regenerate and Restore 4. Transform Some illustrative responses to the AR3T framework for UK real estate organisations include: • Avoid – Destruction of priority habitats through habitat screening at RIBA Stage 0-1 – Illegal logging through supply chain assessment, monitoring, and regulating • Reduce – Use of High Impact Commodities where suitable alternatives are available – Use of fossil fuels as an energy source through refurbishment and retrofit of existing assets • Regenerate and Restore – Deliver net gains for biodiversity (on-/off-site) via development projects – Invest in nature recovery projects in strategically significant locations (e.g., Local Nature Recovery sites) • Transform – Pilot novel methods for nature-related impact and dependency assessment to advance industry standards – Embed nature-related criteria within procurement strategies and materials briefs to influence upstream behaviours It will be necessary to demonstrate embeddedness of risk- and opportunity-related actions via strategies, policies, commitments, plans, and targets. A response should therefore: • Directly link to the dependency and impact assessment (E1 - E4) and risk and opportunity assessment (A1 - A4) • Inform performance measurement (P2) • Define an appropriate frequency to review responses, which itself will depend upon: • The frequency of the process for which the response is designed (i.e., is it related to new development cycles or the annual operation of a standing asset?) • The timeline set to implement the response (i.e., short- vs long-term)

P1 Strategy and resource allocation plans

P2 Target setting and performance management?

P3 Reporting

P4 Presentation

Key question
How will we set targets and define and measure progress?

Considerations	Approaches and Actions
The TNFD states that the "indicators used to monitor performance will likely relate to Exposure (dependencies and impacts, from the Evaluate phase of LEAP) and Magnitude (risks and opportunities, from the Assess phase of LEAP), compared to a baseline and/or reference state"[38] Organisations should therefore define a set of appropriate 'response metrics' that align with "relevant dependency, impact, risk or opportunity metric[s] as far as possible" [39] (see Appendix E) The TNFD recommendations provide an illustrative suite of response metrics which offer a good starting point for thinking about what will be appropriate to the respective business model (TNFD Recommendations, Table 10, Pages 96 - 99) The TNFD recommends that organisations follow the SBTN's TNFD-aligned guidance on target setting: Assess - assessment of impacts Interpret and prioritise - interpretation of data and prioritisation of locations Measure, set and disclose - baseline data collection, target setting and disclosure Act - action to meet targets Track - monitoring, reporting and verifying progress over time An organisation will therefore need to consider: • What to target • How to measure it • The target value and trajectory • The monitoring, reporting and reviewing process	The TNFD recommends the development and use of 'response indicators and metrics' at all levels (i.e., organisation, product/ service line, location-specific) to ensure effective management of dependencies, impacts, risks, and opportunities • Some illustrative response indicators and metrics to support risk management and monitoring include: • Level of integration of nature-related issues into overall risk management and strategy (Indicator) • Embeddedness of circular economy plans within the overall business strategy (Indicator) • Circular material use rate (%) (Metric) • Policies, commitments and targets in place for each significant impact driver identified: • Commitment to 100% traceable timber (Indicator) • Commitment to materials passports for all High Impact Commodities on all new developments (Indicator) • Commitment to delivery of above mandatory BNG on all new UK-based developments (Indicator) • Commitment to measurable uplift in biodiversity value on standing portfolio (owned) (Indicator) • Commitment to measurable uplift in biodiversity value on standing portfolio (under management) (Indicator) • Assets under management covered by targets (% of total) (Metric) • Assets under ownership covered by targets (% of total) (Metric) • Proportion of targets that are time-bound and quantifiable (Metric) • Proportion of targets that address short term, medium-term and long-term risks and opportunities (Metric) • Proportion of sites that have active engagement with local stakeholders on nature-related issues (Metric) • Value of investment in projects that avoid or reduce negative nature impacts or conserve or restore ecosystems or species where impacts cannot be avoided (Metric) • Proportion of suppliers screened on nature-related issues, by spend and/or volume (Metric) • % of upstream value chain that is traceable (Metric) • % of construction cost on High Impact Commodities (Metric) • % of High Impact Commodities purchased with Cradle-to-Cradle certification (Metric) • % of High Impact Commodities procured from sensitive locations (Metric)

Considerations	Approaches and Actions
	• Credible and transparent third-party certification: percentage and/or value of production, consumption and sourcing of raw materials, per certification type (Metric) • Proportion of production, consumption and sourcing of raw materials that is traceable to original location (Metric) • Proportion of suppliers committed to and effectively implementing sustainable production (Metric) • Proportion of sites producing and effectively implementing nature action plans (Metric) • Value invested in voluntary ecosystem and/or species restoration (Metric) • Value of investment in additional conservation actions split into type of action and type of ecosystem/biome applied to (Metric) • Percentage of direct operational locations assessed - upstream and downstream (Metric) • Percentage of indirect operational locations assessed - upstream and downstream (Metric) When establishing targets, consider: What to target When considering what to target, one should consider whether to address nature-related issues directly or indirectly. The appropriateness or significance of which will depend upon the nature of the issue itself. To support this, consider three distinct target categories: 1. Nature-interface targets, relating to: • Impact drivers - e.g., area of land lost for construction activities • State of nature • E.g., ecosystem condition in a location, where quantifiable • Ecosystem service size and quality - e.g., quantified assessment of ecosystem service 2. Operational targets, relating to: • Indicators correlated with, but not directly assessing impacts or dependencies • E.g., efficiency-related targets to reduce resource use, volume of pollution or waste produced, etc. 3. Business model targets, relating to: • Changes that address impacts, dependencies, risks and opportunities - e.g., share of supply chain certified or degree of circularity How to measure it Quantified targets should link to metrics that can be used to support performance monitoring and reporting, i.e., response metrics. These should therefore be: • Relevant - i.e., to the aim of the target. For example, for a target to eliminate deforestation in supply chain by 2025, the following metrics may apply: – 'The volume of deforestation-linked commodities bought each year that cannot be traced to non-deforested land,' or – 'The share of deforestation-linked commodities bought each year that are certified as deforestation-free' • Transparent and practical - i.e., using open-source data and tools or allowing for verification and validation • Responsive - i.e., able to account for changes in business activities in a timely way

Considerations	Approaches and Actions
	Target value and trajectory • It is necessary to assess the level at which the target should be set, the deadline by which it will be achieved, and the trajectory over that period. This should include setting: • A baseline time period against which progress will be monitored • A time horizon by which targets should be achieved (i.e., short-, medium-, long-term) • Interim targets to support progress monitoring and act as a 'checkpoint,' particularly for longer-term targets Monitoring, reporting, and reviewing process Effective monitoring requires targets that are: • Understandable and contextualised - i.e., clarity on what it is, what it is trying to achieve, and why • Reported regularly - at least annually • Periodically reviewed and updated with a clear process for reviewing nature-related targets at least every five years and in light of: : – Advances in science, data availability, assessment methodologies – Changes to organisational structure and business model – Changes to legislation and policy across operational areas and value chain interactions [40]

P1 Strategy and resource allocation plans

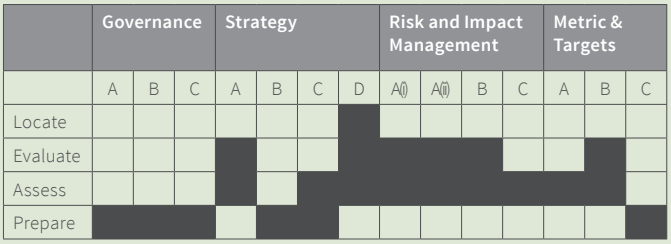
P2 Target setting and performance management?

P3 Reporting

P4 Presentation

Key question
What will we disclose in line with the TNFD disclosure recommendations?

Considerations	Approaches and Actions
The TNFD defines four core disclosure pillars: 1. Governance (A, B, C) 2. Strategy (A, B, C, D) 3. Risk and Impact Management (Ai, Aii B, C) 4. Metrics and Targets (A, B, C) The information gathered throughout the LEAP assessment will facilitate appropriate responses.	Use the information and data gathered through the LEAP assessment to inform responses to disclosures as per the table below:



BBP BETTER BUILDINGS PARTNERSHIP

P1
Strategy and resource allocation plans

P2
Target setting and performance management?

P3
Reporting

P4
Presentation

Key question
What will we disclose in line with the TNFD disclosure recommendations?

Considerations	Approaches and Actions
The TNFD advocates for the disclosure of nature-related risks and opportunities that are integrated into the main annual financial reports required by market regulators, as opposed to a standalone sustainability report issued separately.	• As outlined above, align LEAP information and data with core disclosure pillars • Consider integrating within annual financial reports • Disclosures should ensure they define in detail the methodological approaches adopted, metrics and indicators defined/used, targets set, tools applied, and sources used • The content of nature-related disclosures should be as outlined in the TNFD recommendations, and the presentation of disclosure statements should be consistent with the ISSB's IFRS S1 (General Requirements)

What are the desired outputs of the Prepare stage?

Agreement of the board's oversight and management role in assessing and managing nature-related issues.

- This could include, for example, a description by the executive committee and board outlining the organisation's proposed nature-related risk management strategy, advice on ways to manage and mitigate nature-related risks, and to identify and realise nature-related opportunities for the organisation.
- The output of this can support reporting on TNFD recommended disclosures Governance A and B.

The ability to describe the organisation's processes for engaging Indigenous Peoples, Local Communities and affected stakeholders with respect to the assessment of, and response to, nature-related issues and any agreed actions to improve these processes of engagement.

- The output of this can support reporting on TNFD recommended disclosures Governance C.

Agreement of the overall risk and impact management processes relevant to nature-related issues.

- This could include, for example, a description of the organisation's nature-specific risk and impact management processes.
- The output of this can be used to support reporting on TNFD recommended disclosures Risk and impact management A, B and C.

Agreement on the strategic implications of the organisation's nature-related assessment, taking into consideration different scenarios.

- This could include, for example, a description of how the assessment has influenced decisions related to the organisation's businesses, strategy and financial planning.
- The output of this can support reporting on TNFD recommended disclosures Strategy B and C.

The setting of goals and targets in response to the nature-related assessment.

- This could include, for example, a selected number of science-based, ambitious and verifiable targets and goals for the organisation.
- The output of this can support reporting on TNFD recommended disclosures Metrics and targets C.

Mapping the Assess stage to the TNFD disclosures

he Assess stage can support with the preparation of disclosures for section under the Strategy, Risk & Impact Management and Metrics & Targets pillars of the TNFD Framework.

	Governance			Strategy				Risk and Impact Management				Metric & Targets		
	A	B	C	A	B	C	D	A(i)	A(ii)	B	C	A	B	C
Prepare														

Appendix A: Additional legislation, regulation, and policy drivers

Table 4.2 The 'carrots' and 'sticks' of action for nature

Carrots	Sticks[xi]
• Investor expectations (in line with the 'rise of ESG' in relation to credit ratings) • Customer expectations • Futureproofing against regulatory change such as the mandating of the recommendations of the Taskforce for Nature-related Financial Disclosures (e.g. de-risking individual assets, entire portfolios, and business models) • First market mover advantage amongst peers • New revenue streams / asset value creation opportunities e.g. achieving tangible returns through: – Biodiversity Unit uplifts, Biodiversity Unit banking, nutrient neutrality credit creation, Woodland and/or Peatland Carbon Code credit creation, water attenuation, temperature regulation, etc. • Secondary cost savings via insurance or utility rates • Green finance opportunities (increasingly guided and facilitated by green taxonomies)	• Kunming-Montreal Global Biodiversity Framework – Principally Target 15 • International Sustainability Standards Board (ISSB) • Sustainability Accounting Standards Board (SASB) • Green taxonomies • Global Reporting Initiative's (GRI) Biodiversity Standard • EU Sustainable Finance Disclosure Regulation (SFDR) • Mandatory (EU) disclosure of Principal Adverse Indicators (PAIs) • Corporate Sustainability Reporting Directive (CSRD) • Mandatory (EU) disclosure of material impacts, risks and opportunities arising through its business relationships in its value chain • UK TCFD mandate • UK BNG mandate

International regulations

Kunming-Montreal Global Biodiversity Framework

At COP15 a landmark agreement set new goals and targets to 'halt and reverse' biodiversity loss by the end of the decade. The Kunming-Montreal Global Biodiversity Framework (GBF) includes 23 targets (see Table A.1).[41] Of these, Target 15 states that countries will need 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.'

xi 'Regulations', such as the EU Sustainable Finance Disclosure Regulation (SFDR) act as binding legislation for all EU member states. Nation-specific legislation and mandates such as those found in the Environment Bill are also legally binding, enshrined by acts of parliament or congress. Frameworks and standards establish technical detail and can be used to inform legislation and policy, or be mandated within it, just as the TCFD has been in the UK. Directives are legislative acts that set goals and objectives (i.e., CSRD), however they must be ratified before they become binding. Taxonomies then work to support all of the above, providing guidance and assurances for various aspects of disclosure regulations or standards, such as reporting requirements, green bond issuances, greenwashing, and transition plans.

Table A.1 Kunming-Montreal global targets for biodiversity

Target	Description
1	Effective management of land- and sea-use change, loss of highly important biodiverse areas close to zero by 2030
2	Effective restoration of 30% of degraded ecosystems by 2030
3	Effective conservation and management of 30% of land and 30% of oceans by 2030
4	Halt human-induced extinctions and maintain and restore genetic diversity
5	Sustainable use, harvesting and trade of wild species
6	Mitigate or eliminate the impacts of invasive alien species, reduce the rates of establishment of invasive species by 50% by 2030
7	Reduce pollution risks and impacts from all sources by 2030, reduce the overall risk from pesticides by half
8	Minimise the impacts of climate change and ocean acidification on biodiversity
9	Ensure sustainable use and management of wild species, while protecting customary use by Indigenous peoples
10	Sustainable management of areas under agriculture, aquaculture, fisheries and forestry
11	Restore and enhance ecosystem function through nature-based solutions and ecosystem-based approaches
12	Increase the area and quality of urban green and blue spaces
13	Fair and equitable sharing of the benefits arising from the use of genetic resources
14	Integration of biodiversity into policies and development across all sectors
15	Enable businesses to monitor, assess and disclose their impacts on biodiversity
16	Encourage sustainable consumption, including by reducing food waste by half by 2030
17	Strengthen capacity for biosafety measures and ensure benefits-sharing from biotechnology
18	Phase out or reform harmful subsidies in a just way, reducing them by $500bn by 2030
19	Substantially increase financial resources, mobilise $200bn per year by 2030 from all sources, including $30bn from developed to developing countries
20	Strengthen capacity-building and technology transfer
21	Integrated and participatory management, including the use of traditional knowledge
22	Equitable representation and participation of Indigenous peoples and local communities
23	Ensure gender equality in the implementation of the framework

Target 15 aims 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. Its inclusion within the GBF was a watershed moment, as delivering against it will require organisations to report and disclose in line with TNFD guidance.

International Sustainability Standards Board (ISSB)

Though not yet established, the intention is for the ISSB to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions.[42] The ISSB has four key objectives:

- Developing standards for a global baseline of sustainability disclosures;
- Meeting the information needs of investors;
- Enabling companies to provide comprehensive sustainability information to global capital markets; and
- Facilitating interoperability with disclosures that are jurisdiction-specific and/or aimed at broader stakeholder groups. [43]

Global Reporting Initiative (GRI) Biodiversity Standard

To support reporting on matters that affect the economy, the environment, and society, organisations can draw on the GRI's standards. The GRI comprises a modular system of interconnected standards, which can support reporting across a range of sectors and specific topics (such as biodiversity) in a coherent and structured way. [44]

The Global Sustainability Standards Board identified the review of GRI Standard 304: Biodiversity 2016 as a priority project to support achievement of UN Sustainable Development Goals (SDGs) 14 (Life below water) and 15 (Life on land),[xii] and to meet the reporting obligations outlined in Target 15 of the GBF.

Significant proposals, changes and inclusions in the draft revision are outlined below:

- Facilitate reporting impacts across the supply chain;
- Focus on the most significant impacts on biodiversity;
- Emphasis on providing location-specific information on impacts;
- New disclosure to report on the direct drivers of biodiversity loss (i.e., climate change, invasive alien species, land and sea use change, overexploitation of resources, pollution);
- New disclosure to report on the changes to the state of biodiversity (i.e., type, size, and condition of ecosystems affected or potentially affected);
- New requirements on the impacts on people resulting from an organisation's impacts on biodiversity, including:
  - Reporting if the organisation operates in proximity to areas of high biodiversity value that are important to indigenous peoples and local communities (Disclosure 304-1);
  - Reporting the significant ecosystem services and the beneficiaries of these ecosystem services that are or could be affected by the organisation or its suppliers (Disclosure 304- 77 4);
  - Management of these impacts, including how the organisation addresses the negative impacts of the transition to halt and reverse the loss of biodiversity on workers and local communities (Disclosure 304-6); and
  - Reporting how the organisation respects the provisions set out in the Nagoya Protocol to achieve the fair and equitable sharing of benefits arising from utilizing genetic resources and the associated traditional knowledge (Disclosure 304-7).
- New biodiversity-specific management disclosures, including:
  - Application of the mitigation hierarchy;
  - Alignment with the GBF. [45]

Sustainability Accounting Standards Board (SASB)

The SASB mirrors the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) to provide information in a format that the financial community can use to understand ESG issues and make good long-term investment decisions.[46] SASB standards are focused on ESG issues that are likely to have material financial effects. In recent years, we've seen a concept emerge of double, dynamic, or nested materiality (reflected in the vernacular of the TCFD and

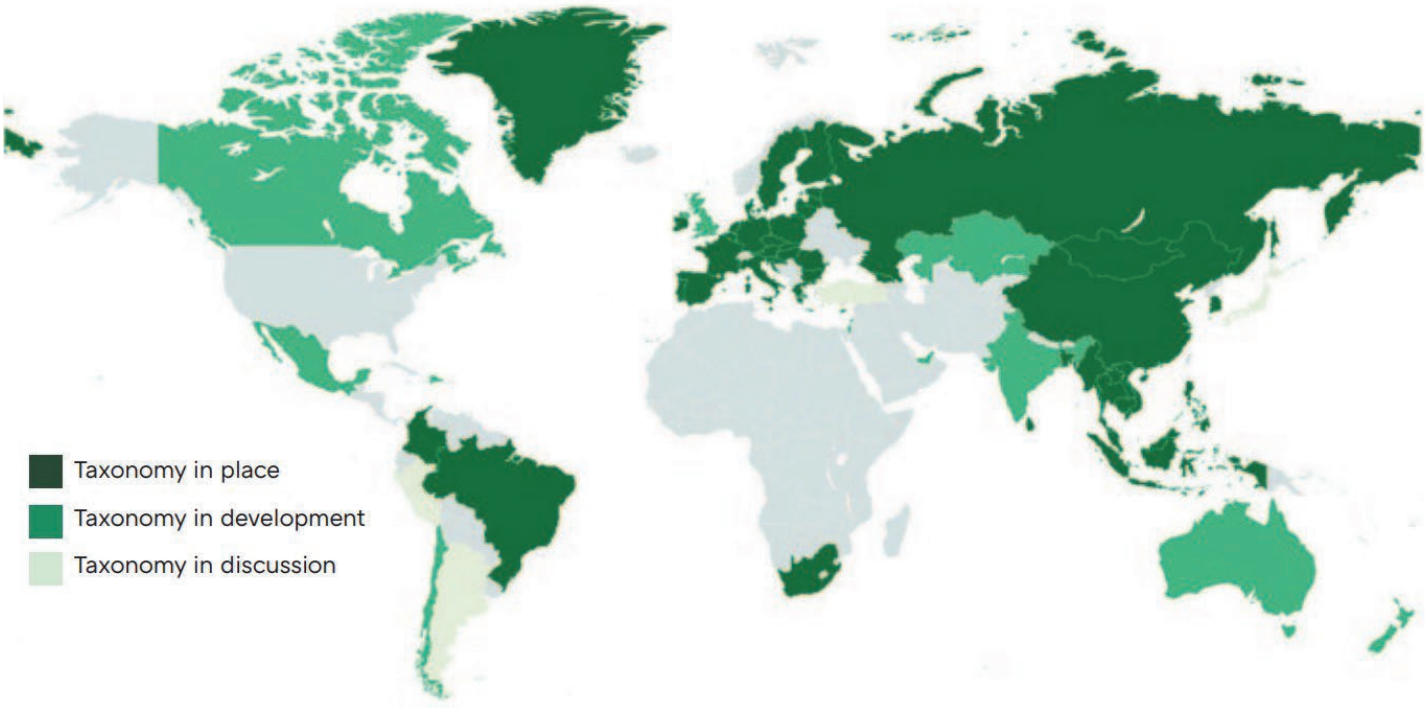
xii SDG 14 is devoted to "conserve and sustainably use the oceans, seas and marine resources". While SDG 15 is devoted to "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

TNFD), which guides the different levels of reporting that companies undertake. As a minimum, companies report on 'traditional' information that is already reflected in their financial accounts, aligning with IASB and FASB standards. Companies also report on the subset of sustainability topics that are material to the creation of 'enterprise value'; this is where SASB standards lie. The SASB framework is industry specific and includes a matrix of potentially material factors for business leaders in 11 industries and 77 subsectors.

Green Taxonomies

A number of taxonomies have been established and are emerging across the world (Figure A.1). The implications of the EU Taxonomy are significant as they provide "companies, investors and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable". [47]

Figure A.1: Global distribution of green taxonomies [48]



At present, the EU Taxonomy is only defined for two climate aspects: mitigation and adaptation. However, additional metrics for the following environmental aspects are planned:

- Sustainable use and protection of aquatic and marine resources;
- Transition to a circular economy;
- Pollution prevention and reduction;
- Protection and restoration of the biodiversity and ecosystem. [49]

EU regulations

Sustainable Finance Disclosure Regulation (SFDR)

The EU SFDR was adopted by the European Commission in April 2022 and establishes specific environmental criteria related to economic activities for investment purposes, and which forms part of the EU Action Plan on Sustainable Finance. The EU SFDR requires:

… specific firm-level disclosures from asset managers and investment advisers regarding how they address two key considerations: Sustainability Risks and Principal Adverse Impacts. With regards to asset managers, the EU SFDR also mandates transparency of remuneration policies in relation to the integration of sustainability risks. [50]

The overarching aim of the EU SFDR is to improve transparency in the market for sustainable investment products. As part of the EU SFDR, organisations need to report Principal Adverse Indicators (PAIs). At present, there are two mandatory indicators focusing on EPCs and fossil fuel storage, though there are additional PAIs relating to waste, resource consumption, and biodiversity (Table A.2).

In October 2022, the UK Financial Conduct Authority (FCA) issued a consultation paper regarding UK Sustainability Disclosure Requirements (UK SDR). At the time of writing the feedback has not been published.

Table A.2: EU SFDR's Principal Adverse Indicators

Adverse sustainability impact	Adverse sustainability impact	Metric
GHG emissions	18. GHG emissions	Scope 1 & 2 GHG emissions (Scope 3 from Jan 2023)
Energy consumption	19. Energy consumption intensity	Energy consumption in GWh per square meter
Waste	20. Waste production in operations	Share of assets not equipped with facilities for waste sorting or covered by a waste recovery or recycling contract
Resource consumption	21. Raw materials consumption for new construction and major renovations	Share of raw building materials (excluding recovered, recycled and biosourced) compared to the total weight of building materials used in new construction and major renovations
Biodiversity	22. Land artificialisation	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared to the total surface area of the plots of all assets

Corporate Sustainability Reporting Directive (CSRD)

On 5th January 2023, the CSRD was established, which supplements the Non-Financial Reporting Directive (NFRD) in requiring companies to disclose climate-relevant information.[52] The CSRD expands the scope of the legislation to include all large companies, listed SMEs and EU subsidiaries of non-EU companies. Similarly, investors will have to disclose ESG-related information from investees. The CSRD also makes it mandatory for companies to have an audit of the sustainability information that they report.

United Kingdom specific regulation

Biodiversity Net Gain (BNG)

As of 12th February 2024, the delivery of ≥10% Biodiversity Net Gain (BNG) was mandated on all new developments in the UK,[xiii] as the Environment Bill came into effect.

Taskforce on Climate-related Financial Disclosures (TCFD)

In January 2022, the UK Government mandated TCFD reporting FCA-regulated asset owners, managers, and pension providers. As of April 2022, >1,300 of the largest UK-registered companies and financial institutions were mandated to disclose in line with TCFD recommendations.

xiii There are a small number of exempt circumstances, which can be viewed here.

Appendix B: Overview of sectors and industries related to UK real estate activities

SASB Sector	Industry Interactions
Consumer Goods	Apparel, Accessories & Footwear Building Products & Furnishings Multiline and Specialty Retailers & Distributors Household & Personal Products
Extractives & Minerals	Oil & Gas Metals & Mining Construction Materials Coal
Financials	Asset Management & Custody Activities Investment Banking & Brokerage Commercial Banks Consumer Finance Mortgage Finance Insurance
Food & Beverage	Restaurants Food Retailers & Distributors
Infrastructure	Electrical Utilities & Power Generators Real Estate Services Gas Utilities & Distributors Engineering & Construction Services Real Estate Waste Management Coal/Fuel/Gas Power Solar Power Homebuilders
Renewable Resources & Alternative Energy	Biofuels Forestry Management Solar Technology & Project Developers
Services	Advertising & Marketing Professional & Commercial Services Hotels & Lodging
Technology & Communications	Software & IT Services Internet Media & Services

Appendix C: TNFD Materiality Approach and Other Reporting Frameworks

Whilst the TNFD does not require any particular approach, other disclosure requirements and reporting directives do.

Materiality and CSRD

In January 2023, the European Union (EU) Corporate Sustainability Reporting Directive (CSRD) entered into force. This new directive strengthens the rules concerning the social and environmental information that companies must report against. The CSRD is mandatory for corporates and financial institutions in the EU, as well as those that market into, or have significant operations in, the EU.

The CSRD requires that, in addition to reporting on its own operations, an in-scope organisation will need to disclose information on the material impacts, risks and opportunities arising through its business relationships in its value chain (i.e., a double materiality approach). Therefore, in-scope organisations are likely to request information on nature and ecosystems from companies that form part of their value chain as part of their procurement processes in order comply with the CSRD.

The CSRD guidance is comprised of European Sustainability Reporting Standards (ESRS), with 'ESRS E4' relating specifically to biodiversity and ecosystems.

Materiality and SFDR

As of June 2023, the EU Sustainable Finance Disclosure Regulation (SFDR) has required financial institutions and advisors ('financial market participants' or 'FMPs') to disclose both 'sustainability risks' and 'Principle Adverse Impacts' (PAIs).

The former refers to those sustainability events that could materiality impact investments (i.e., single materiality). The latter, however, requires disclosure of negative consequences an investment decision may have on sustainability factors (i.e., double materiality).

Biodiversity is one of a suite of mandatory PAI indicators which require FMPs to disclose ‘activities negatively affecting biodiversity sensitive areas.' This includes reporting against, for example, the share of investments in investee companies with 'sites/operations located in or near to biodiversity sensitive areas, where their activities negatively impact those areas.'

The SFDR is mandatory for EU FMPs and those marketing in the EU.

Appendix D: SBTN's High Impact Commodity List (HICL): Commodities associated with 'Built Environment and Infrastructure' and 'Energy and Extractives'

Commodity name	Classification	Socioeconomic system	Associated material pressures - from SBTN literature review	Additional material pressures - from ENCORE
Cement	Commodity	Built environment and infrastructure	Land use and land change; other resource use; water use; climate change; soil pollution; freshwater pollution	Freshwater ecosystem use; marine ecosystem use
Coal	Commodity	Energy and extractives	Land use and land change; other resource use; water use; climate change; soil pollution; freshwater pollution	Freshwater ecosystem use
Copper	Commodity	Energy and extractives	Land use and land use change; other resource use; water use; climate change; soil pollution; water pollution	Freshwater ecosystem use; marine ecosystem use
Gold	Commodity	Energy and extractives	Land use and land use change; other resource use; water use; climate change; soil pollution; water pollution	Freshwater ecosystem use; marine ecosystem use
Iron	Commodity	Energy and extractives	Land use and land use change; other resource use; water use; climate change, solid waste	Nothing additional
Lead	Commodity	Energy and extractives	Land use and land use change; soil pollution; water pollution	Freshwater ecosystem use; marine ecosystem use; other resource use; water use; climate change
Liquefied natural gas (LNG)	Commodity	Energy and extractives	Land use and land use change; other resource use; water use; climate change; soil pollution; freshwater pollution; non-GHG air pollution	Land use and land use change; freshwater ecosystem use; marine ecosystem use; other resource use; water use; climate change; soil pollution; water pollution
Lithium	Commodity	Energy and extractives	Land use and land change; other resource use; water use; soil pollution; water pollution, non-GHG air pollution	Freshwater ecosystem use; marine ecosystem use; climate change

Nickel	Commodity	Energy and extractives	Land use and land use change	Freshwater ecosystem use; marine ecosystem use; other resource use; water use; climate change; soil pollution; freshwater pollution
Oil (crude) / Petroleum	Commodity	Energy and extractives	Land use and land use change; marine ecosystem change; other resource use; water use; climate change; soil pollution; freshwater pollution; marine pollution	Freshwater ecosystem use
Platinum	Commodity	Energy and extractives	Land use and land use change; soil pollution; freshwater pollution; marine pollution	Freshwater ecosystem use; marine ecosystem use; other resource use; water use; climate change
Potash	Commodity	Energy and extractives	Land use and land use change; water use; climate change; soil pollution; freshwater pollution	Land use and land use change; freshwater ecosystem use; marine ecosystem use; other resource use; water use; climate change; soil pollution; freshwater pollution
Sand (Construction-grade)	Commodity	Energy and extractives; Built environment and infrastructure	Freshwater ecosystem use change; marine ecosystem use change; soil pollution; freshwater pollution	Land use and use change; other resource use; water use; climate change
Silver	Commodity	Energy and extractives	Land use and land use change; other resource use; water use; climate change; soil pollution; water pollution	Freshwater ecosystem use; marine ecosystem use
Zinc	Commodity	Energy and extractives	Land use and land use change; freshwater pollution	Freshwater ecosystem use; marine ecosystem use; other resource use; water use; climate change; soil pollution
Bauxite / Aluminium	Commodity / Value added commodity	Energy and extractives	Land use and land use change; other resource use; water use; climate change; soil pollution; water pollution	Freshwater ecosystem use; marine ecosystem use
Gasoline	Value added commodity (derived from Crude/ petroleum)	Energy and extractives	Water use; climate change; soil pollution; freshwater pollution; marine pollution	Nothing additional
Steel	Value added commodity (derived from Iron, Limestone, Coal, and other metals)	Built environment and infrastructure	Climate change; soil pollution; freshwater pollution; non-GHG air pollution	Water use

Appendix E: Metrics and Indicators to support assessment, evaluation, and reporting

C/A/N	Indicator	Metric
C	Extent of land/ freshwater/ocean-use change	C1.0 - Total spatial footprint (sum of):[xiv] Total surface area controlled/ managed by the organisation, where the organisation has control (km^2) Total disturbed area (km^2) Total rehabilitated/restored area (km^2)
C	Extent of land/ freshwater/ocean-use change	C1.1 - Extent of land/freshwater/ocean ecosystem conserved or restored (km^2), split into: Voluntary; and Required by statutes or regulations.
C	Extent of land/ freshwater/ocean-use change	C1.1 - Extent of land/ freshwater/ ocean use change Extent of land/freshwater/ocean ecosystem use change (km^2) by:[xv] Type of ecosystem Type of business activity
C	Pollutants released to soil split by type	Pollutants released to soil (tonnes) by type, referring to sector-specific guidance on types of pollutants.
C	Wastewater discharged	C2.1 - Volume of water discharged (m^3), split into: Total Freshwater; and Other Including: Concentrations of key pollutants in the wastewater discharged, by type of pollutant, referring to sector-specific guidance for types of pollutants; and Temperature of water discharged, where relevant.
C	Waste generation and disposal	C2.2 - Weight of hazardous and non-hazardous waste generated by type (tonnes), referring to sector specific guidance for types of waste. Weight of hazardous and non-hazardous waste (tonnes) disposed of, split into: Waste incinerated (with and without energy recovery); Waste sent to landfill; and Other disposal methods. Weight of hazardous and non-hazardous waste (tonnes) diverted from landfill, split into waste: Reused; Recycled; and Other recovery operations.
C	Plastic pollution	C2.3 - Plastic footprint as measured by total weight (tonnes) of plastics (polymers, durable goods and packaging) used or sold broken down into raw material content. For plastic packaging, percentage of plastics that is: Reusable; Compostable; Technically recyclable; and Recyclable in practice and at scale.

xiv The land footprint under the core global disclosure metric should include land owned, leased or managed.
xv Land-use change reported under the core global disclosure metric should distinguish land-use changes by original land uses: brownfield sites, greenfield sites, developed land, undeveloped land, farmland, wetland, etc.

C	Non-GHG air pollutants	C2.4 - Non-GHG air pollutants (tonnes) by type: Particulate matter PM2.5 and/or PM10); Nitrogen oxides (NO_2, NO and NO_3); Volatile organic compounds (VOC or NMVOC); Sulphur oxides (SO_2, SO, SO_3, SOx); and Ammonia (NH_3).
C	Water withdrawal and consumption from areas of water scarcity	C3.0 - Water withdrawal and consumption25 (m^3) from areas of water scarcity, including identification of water source.
C	Quantity of high-risk natural commodities sourced from land/ ocean/freshwater	C3.1 - Quantity of high-risk natural commodities (tonnes) sourced from land/ocean/ freshwater, split into types, including proportion of total natural commodities.
C	Quantity of high-risk natural commodities sourced from land/ ocean/freshwater	C3.1 - Quantity of high-risk natural commodities (tonnes) sourced from land/ocean/ freshwater, split into types, including proportion of total natural commodities.
C	Placeholder indicator: Measures against unintentional introduction of invasive alien species (IAS)	C4.0 - Proportion of high-risk activities operated under appropriate measures to prevent unintentional introduction of IAS, or low risk designed activities.
C	Placeholder indicator: Ecosystem condition	C5.0 - For those organisations that choose to report on state of nature metrics, the TNFD encourages them to report the following indicators, and to refer to the TNFD additional guidance on measurement of the state of nature in Annex 2 of the LEAP approach: Level of ecosystem condition by type of ecosystem and business activity; and Species extinction risk. There are a number of different measurement options for these indicators. The TNFD does not currently specify one metric as there is no single metric that will capture all relevant dimensions of changes to the state of nature and a consensus is still developing. The TNFD will continue to work with knowledge partners to increase alignment.
PA	Change in fragmentation due to linear infrastructure	Length (km), footprint (km^2), number of lanes, planned traffic volume, and surface or material type of upgraded and/or new linear infrastructure (e.g. roads, rails, powerlines, canals, pipelines, fences) built: in sensitive locations, by sensitive location criteria met, stating the ecosystem type; and in other areas, stating the ecosystem type(s). Number of completed wildlife crossing structures or other fragmentation mitigation methods per kilometre of linear infrastructure, including: Number with verified wildlife use; and Length, width and/or height (underpasses only) of crossing structures. Crossing structures include underpasses, overpasses, canopy bridges. Other fragmentation mitigation efforts may include retrofits of existing culverts, fencing and jump-outs.

PA	Spills	Volume of spills of diesel, paints, solvents, and toxic chemicals, and wastewater discharges that exceed local regulatory or international standards (m^3), by national or company spill classification scheme, where relevant, and by type of ecosystem affected, with reference to the standard adhered to.
PA	Manure and compost use	Manure and compost input to landscaped area (t).
PA	Green space creation	Green space created. Potential measures could include: Green plot ratio; Urban greening factor; Area of green space created (m^2); Planted area (m^2); Area of tree planting (m^2); Number of trees planted; Surface area of a building on which plants are planted, including vertical area (m^2); and Share of area above threshold for normalised difference vegetation index. Reports of greenspace created should include: Proportion (%) of plant species that are native to the ecoregion (number of specimens as a proportion of total); and Proportion (%) of green space created that overlaps with national or local ecosystem connectivity plans, where such plans exist, with reference to the plan adhered to.
PA	Light pollution	Contribution to light pollution, measured, for example, by: Number and proportion (%) of outdoor lights by backlight, uplight and glare (BUG) rating; Number and proportion (%) of outdoor lights above 2700K; Total outdoor lighting (lumen and lumen/ha); Total (m^2) and proportion (%) of area with nighttime lighting; and/or Number and proportion (%) of outdoor lights that are kept on at night; and number and proportion (%) of outdoor lights that are and are not dimmed at night, by degree of dimming.
PA	Noise pollution	Contribution to noise pollution, measured, for example, by: Average noise level and/or frequency (dB, Hz) across the 2-hour periods centred on sunrise and sunset before the construction period started (baseline), and during the construction project, on-site and/or in the nearest noise-sensitive habitat to the most significant noise source; and/or Average noise level and/or frequency across the day (dB, Hz), before the construction period started (baseline), and during the construction project, on-site and/or in the noise-sensitive habitat nearest the most significant noise source; and/or Average noise level and/or frequency (dB, Hz) before the construction period started (baseline), and at the noisiest period of the day during the construction project, on-site and/or in the noise-sensitive habitat nearest the most significant noise source; and/or Number of incidents where noise level exceeded local regulatory or international standards.

PA	Invasive alien species management	Area of land owned, controlled, managed or leased with invasive alien species present during reporting period (km^2). Proportion (%) of this area with the invasive alien species under effective management. Area of land owned, controlled, managed or leased cleared of invasive alien species during reporting period (km^2).
PA	Circularity of material use	Proportion of materials used that are recycled and reused input materials by significant categories of raw materials, renewable materials and manufactured products (%); or Share of total mass of materials, products and components/systems for the new build/refurbishment/fit-out that have been reused, repurposed or remanufactured, either from the building undergoing demolition, refurbishment, fit-out or from other buildings, third parties etc. (%).
PA	Value chain certification	The proportion (%) of materials used that are covered by environmental product declarations and other credible environmental labels, by material and environmental product declaration or label standard.
PUK	Biodiversity protection and enhancement	Biodiversity Net Gain, measured by: Total On-Site Net % Change (for planning) Total Off-Site Net % Change (for planning) Total Net Habitat Units (HU) delivered (for planning) Total Net Hedgerow Units (HeU) delivered (for planning) Total Watercourse Units (WU) delivered (for planning) Biodiversity Net Gain, measured by: Total On-Site Net % Change (outside of planning) Total Off-Site Net % Change (outside of planning) Total Net Habitat Units (HU) delivered (outside of planning) Total Net Hedgerow Units (HeU) delivered (outside of planning) Total Watercourse Units (WU) delivered (outside of planning)
PUK	Biodiversity protection and enhancement	Proportion (%) of land/ assets owned, controlled, managed or leased that has an active Nature Action Plan in place.
PUK	Value chain transparency	The proportion (%) of materials used that: Have undergone lifecycle assessment Have materials passports Have supply chain data beyond Tier 1 suppliers.

Appendix F: UK real estate direct operations and value chain dependency and impact screening

Example dependency and impact screening exercise for UK Real Estate interactions

The results presented below are drawn from two open access tools that can support impact and dependency screening: the WWF's Biodiversity Risk Filter (BRF) and the SBTN's Materiality Screening Tool (MST).

The industries included within the filtered selection outlined in Tables A.1 - A.5 have been selected based upon the responses regarding sectors/ industries from the Working Group, as listed in Table 1.1.

The scope of individual organisations' operations and value chains will differ, depending on their business model. The examples provided across A.1 - A.5 are therefore illustrative; however, they highlight the typical interactions that exhibit potentially moderate/ high dependencies and impacts and provide steer on the thresholds for inclusion within the LEAP assessment and disclosure.

WWF Biodiversity Risk Filter

The WWF's BRF Suite assigns dependency and impact ratings to a range of industry sectors.[53] The dependency data draws on ENCORE's natural capital risk ratings and outlines how dependent a sector is on a range of physical and reputational risk indicators.[54]

Any sector with a score of 3 or more is considered to have moderate (3), high (4), or very high (5) dependencies/ impacts. For L2, organisations are to consider any activities, sectors, value chains with moderate dependencies/ impacts or greater.

Table A.1: WWF Biodiversity Risk Filter: Results for UK real estate-related industries

Indicator #	BRF Indicators	Impact/ Dependency	Industry																								
			Agriculture (animal products)	Agriculture (plant products)	Appliances & General Goods Manufacturing	Automotive, Electrical Equipment & Machinery Production	Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Electric Energy Production – Hydropower	Electric Energy Production - Solar, Wind	Electronics & Semiconductor Manufacturing	Food & Beverage Production	Food Retailing	General or Speciality Retailing	Health Care, Pharmaceuticals and Biotechnology	Hospitality Services	Land Development & Construction	Metals & Mining	Offices & Professional Services	Oil, Gas & Consumable Fuels	Paper & Forest Product Production	Telecommunication services (including wireless)	Textiles, Apparel & Luxury Good Production	Waterutilities / Water Service Providers	Other (Average of all sectors)
Physical Risk																											
Provisioning Services																											
1.1	Water Scarcity	Dependency	5	5	4	4	4	5	5	5	3	4	5	2	2	4	4	3	5	2	4	5	2	5	5	4
1.2	Limited Timber Availability	Dependency	0	0	0	0	0	4	4	0	0	0	0	0	0	0	2	4	4	0	4	5	2	5	0	1
1.3	Limited Wild Flora & Fauna Availability	Dependency	1	1	0	3	1	1	0	0	0	0	3	0	0	3	2	2	0	0	0	3	0	2	0	1
1.4	Limited Marine Fish Availability	Dependency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1
Regulating & Supporting Services - Enabling																											
2.1	Soil Condition	Dependency	4	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	5	0	0	1	1
2.2	Water Condition	Dependency	5	4	2	2	3	2	2	3	2	2	4	2	2	3	4	2	2	2	2	4	2	2	4	3
2.3	Air Condition	Dependency	3	3	2	2	2	2	2	1	2	2	2	1	1	1	3	3	3	3	3	3	0	2	2	2
2.4	Ecosystem Condition	Dependency	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1
2.5	Pollination	Dependency	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1

Indicator #	BRF Indicators	Impact/ Dependency	Industry																								
			Agriculture (animal products)	Agriculture (plant products)	Appliances & General Goods Manufacturing	Automotive, Electrical Equipment & Machinery Production	Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Electric Energy Production – Hydropower	Electric Energy Production - Solar, Wind	Electronics & Semiconductor Manufacturing	Food & Beverage Production	Food Retailing	General or Speciality Retailing	Health Care, Pharmaceuticals and Biotechnology	Hospitality Services	Land Development & Construction	Metals & Mining	Offices & Professional Services	Oil, Gas & Consumable Fuels	Paper & Forest Product Production	Telecommunication services (including wireless)	Textiles, Apparel & Luxury Good Production	Water utilities / Water Service Providers	Other (Average of all sectors)
Regulating Services - Mitigating																											
3.1	Landslides	Dependency	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	5	4
3.2	Wildfire Hazard	Dependency	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	4	3
3.3	Plant/Forest/Aquatic Pests and Diseases	Dependency	4	4	0	0	0	0	0	0	0	0	4	0	0	4	1	0	0	0	0	4	0	0	0	1
3.4	Herbicide Resistance	Dependency	4	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	4	0	0	2	1
3.5	Extreme Heat	Dependency	5	5	3	3	3	3	4	3	3	3	3	3	3	3	4	4	4	4	4	5	3	3	4	4
3.6	Tropical Cyclones	Dependency	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	5	4
Cultural Services																											
4.1	Tourism Attractiveness	Dependency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	1
Pressures on Biodiversity																											
5.1	Land, Freshwater and Sea Use Change	Impact	5	5	1	1	1	1	1	5	3	1	1	1	1	1	1	5	5	1	5	5	3	1	1	3
5.2	Deforestation	Impact	5	5	1	1	1	5	4	4	1	1	1	1	1	1	3	5	5	1	5	5	5	1	1	3
5.3	Invasives	Impact	3	3	0	0	0	2	0	2	0	0	2	2	2	0	3	2	2	0	2	3	2	0	3	2
5.4	Pollution	Impact	5	5	5	5	5	5	5	4	4	5	4	4	4	5	2	5	5	2	5	4	2	5	2	1

Indicator #	BRF Indicators	Impact/ Dependency	Industry																								
			Agriculture (animal products)	Agriculture (plant products)	Appliances & General Goods Manufacturing	Automotive, Electrical Equipment & Machinery Production	Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Electric Energy Production – Hydropower	Electric Energy Production - Solar, Wind	Electronics & Semiconductor Manufacturing	Food & Beverage Production	Food Retailing	General or Speciality Retailing	Health Care, Pharmaceuticals and Biotechnology	Hospitality Services	Land Development & Construction	Metals & Mining	Offices & Professional Services	Oil, Gas & Consumable Fuels	Paper & Forest Product Production	Telecommunication services (including wireless)	Textiles, Apparel & Luxury Good Production	Water utilities / Water Service Providers	Other (Average of all sectors)
Environmental Factors																											
6.1	Protected/Conserved Areas	Impact	5	5	3	3	3	3	5	4	4	3	3	1	1	3	1	5	5	1	5	5	3	3	3	3
6.2	Key Biodiversity Areas	Impact	4	4	2	2	2	2	4	3	3	2	2	1	1	2	1	4	4	1	4	4	2	2	2	3
6.3	Other Important Delineated Areas	Impact	4	4	2	2	2	2	4	4	2	2	2	1	1	2	1	4	4	1	4	4	2	2	2	3
6.4	Ecosystem Condition	Impact	4	4	2	2	2	2	4	4	2	2	2	1	1	2	1	4	4	1	4	4	2	2	2	3
6.5	Range Rarity	Impact	3	3	1	1	1	1	3	3	3	1	1	0	0	1	2	3	3	0	3	3	2	1	2	2
Socioeconomic Factors																											
7.1	Indigenous Peoples (IPs); Local Communities (LCs) Lands and Territories	Impact	5	5	3	3	3	3	3	5	3	3	3	1	1	3	1	5	5	1	5	5	3	3	3	3
7.2	Resource Scarcity: Food - Water - Air	Impact	3	3	1	1	1	1	1	1	0	1	2	1	0	1	3	1	2	0	2	0	0	2	1	1
7.3	Labor/Human Rights	Impact	4	4	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	2	4	2	2	4	2	3
7.4	Financial Inequality	Impact	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Indicator #	BRF Indicators	Impact/ Dependency	Industry																								
			Agriculture (animal products)	Agriculture (plant products)	Appliances & General Goods Manufacturing	Automotive, Electrical Equipment & Machinery Production	Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Electric Energy Production – Hydropower	Electric Energy Production - Solar, Wind	Electronics & Semiconductor Manufacturing	Food & Beverage Production	Food Retailing	General or Speciality Retailing	Health Care, Pharmaceuticals and Biotechnology	Hospitality Services	Land Development & Construction	Metals & Mining	Offices & Professional Services	Oil, Gas & Consumable Fuels	Paper & Forest Product Production	Telecommunication services (including wireless)	Textiles, Apparel & Luxury Good Production	Water utilities / Water Service Providers	Other (Average of all sectors)
Additional Reputational Factors																											
8.1	Media Scrutiny	Dependency	5	5	3	1	4	4	2	2	2	1	5	3	3	1	3	4	5	3	4	1	1	3	5	3
8.2	Political Situation	Dependency	3	3	2	2	2	2	3	3	2	2	3	1	1	2	3	3	3	1	3	3	2	2	2	2
8.3	Sites of International Interest	Dependency	3	3	2	2	2	2	3	3	2	2	2	0	0	2	3	3	3	0	3	3	2	2	2	2
8.4	Risk Preparation	Dependency	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Using the BRF, identify where individual physical and reputational risks exceed impact/ dependency thresholds for economic activities and require further assessment. I.e., any indicator/ industry combination in Table A.1 that is within the business model/ value chain and has a score of 3 or more should be included in the LEAP assessment beyond L2.

At a higher level, tally the industry scores to highlight where most potentially moderate/ high/ very high impacts and dependencies are concentrated, as outlined in Table A.2.

Table A.2: Tally of impact and dependency scores for UK real estate-related industries

Agriculture (animal products)	Agriculture (plant products)	Appliances & General Goods Manufacturing	Automotive, Electrical Equipment & Machinery Production	Chemicals & Other Materials Production	Construction Materials	Electric Energy Production - Combustion (Biomass, Coal, Gas, Nuclear, Oil), Geothermal Energy	Electric Energy Production – Hydropower	Electric Energy Production - Solar, Wind	Electronics & Semiconductor Manufacturing	Food & Beverage Production	Food Retailing	General or Speciality Retailing	Health Care, Pharmaceuticals and Biotechnology	Hospitality Services	Land Development & Construction	Metals & Mining	Offices & Professional Services	Oil, Gas & Consumable Fuels	Paper & Forest Product Production	Telecommunication services (including wireless)	Textiles, Apparel & Luxury Good Production	Water utilities / Water Service Providers	Other (Average of all sectors)
208	212	104	103	108	124	139	143	109	100	128	81	79	111	134	171	170	75	167	203	108	118	126	134

SBTN Materiality Screening Tool

The SBTN MST provides materiality ratings for different economic activities, in relation to 12 nature-related pressure categories. Of the pressure categories included in the MST, only the following are 'in scope' for the v1 SBTN methods, released in 2023:

- Terrestrial ecosystem use (Land use and land use change)
- Water use
- GHG emissions
- Water pollutants
- Soil pollutants

To set targets using the v1 SBTN methods (as is recommended by the TNFD in the Prepare stage: P2), companies will be required to complete, at a minimum, a materiality screening of these five pressure categories.

The tool also sets a series of materiality thresholds, as follows:

- Terrestrial ecosystem use: 8
- Freshwater ecosystem use: 8
- Marine ecosystem use: 8
- Water use: 8
- Other resource use: 8
- GHG emissions: 9
- Non-GHG air pollutants: 7
- Water pollutants: 7
- Soil pollutants: 6
- Solid waste: 7
- Disturbances: 7
- Biological alterations: 6

These materiality thresholds align with those underpinning the ENCORE tool.

Where economic activities exceed the pressure threshold, the materiality rating will be '1', and they require further assessment in the LEAP process.

Table A.3 provides a tally of the total number of material thresholds exceeded and nature-related pressures to address further. Tables A.4 and A.5 provide a full breakdown of the weightings for all the UK real estate-related industries included in the screening exercise. A high-level of review of Table A.3 highlights that those activities associated with oil and gas, infrastructure builds, and mining exceed the most materiality thresholds and will require the most consideration.

Table A.3: SBTN Materiality Screening Tool: Number of nature-related pressures to assess by UK real estate industry activity

International Standard Industrial Classification of All Economic Activities (ISIC) Group (Alphabetical)	Production process (associated with each 'group')	Pressure to assess
Activities auxiliary to financial service activities, except insurance and pension funding	Financial services	0
Activities auxiliary to insurance and pension funding	Financial services	0
Architectural and engineering activities and related technical consultancy	Infrastructure builds	8
	Infrastructure holdings	3
	Infrastructure maintenance contracts	2
Building completion and finishing	Infrastructure builds	8
	Infrastructure maintenance contracts	2
Construction of buildings	Construction	5
	Real estate activities	3
Demolition and site preparation	Infrastructure builds	8
	Infrastructure maintenance contracts	2
Electrical, plumbing and other construction installation activities	Infrastructure builds	8
	Infrastructure maintenance contracts	2
Extraction of crude petroleum	Integrated oil and gas	8
	Oil and gas exploration surveys	7
Extraction of natural gas	Integrated oil and gas	8
	Oil and gas exploration surveys	7
Fund management activities	Financial services	0
Installation of industrial machinery and equipment	Infrastructure holdings	3
Insurance	Financial services	0
	Managed health care	2
Landscape care and maintenance service activities	Environmental and facilities services	0

International Standard Industrial Classification of All Economic Activities (ISIC) Group (Alphabetical)	Production process (associated with each 'group')	Pressure to assess
Logging	Large-scale forestry	3
	Production of forest and wood-based products	4
	Small-scale forestry	4
Manufacture of basic iron and steel	Iron metal production	3
	Steel production	2
Manufacture of glass and glass products	Catalytic cracking, fractional distillation and crystallisation	5
	Construction materials production	6
	Metal processing	2
Manufacture of non-metallic mineral products n.e.c.	Construction materials production	6
	Electronics and hardware production	2
	Glass making	4
	Houseware and specialities production	3
Manufacture of paper and paper products	Paper packaging production	3
	Production of paper products	3
Manufacture of products of wood, cork, straw and plaiting materials	Glass making	4
	Houseware and specialities production	3
	Large-scale forestry	3
	Paper packaging production	3
	Production of forest and wood-based products	4
	Small-scale forestry	4
Manufacture of wearing apparel, except fur apparel	Jewellery production	2
	Natural fibre production	5
	Synthetic fibre production	4

International Standard Industrial Classification of All Economic Activities (ISIC) Group (Alphabetical)	Production process (associated with each 'group')	Pressure to assess
Manufacture of wiring and wiring devices	Electronics and hardware production	2
Mining and quarrying n.e.c.	Iron extraction	4
	Mining	7
Mining of hard coal	Mining	7
Mining of non-ferrous metal ores	Mining	7
Quarrying of stone, sand and clay	Construction materials production	6
Real estate activities on a fee or contract basis	Real estate activities	3
Real estate activities with own or leased property	Real estate activities	3
Restaurants and mobile food service activities	Restaurant provision	0
Support activities for other mining and quarrying	Iron extraction	4
	Mining	7
Waste treatment and disposal	Environmental and facilities services	0
Wireless telecommunications activities	Telecommunication and wireless services	0

Table A.4: SBTN Materiality Screening Tool: Indexed pressure score and materiality rating by UK real estate industry activity

		Land/Water/Sea use change					
		Terrestrial use		Freshwater use		Marine use	
ISIC Group (Alphabetical)	Production process (associated with each 'group')	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)
Activities auxiliary to financial service activities, except insurance and pension funding	Financial services	ND	ND	ND	ND	ND	ND
Activities auxiliary to insurance and pension funding	Financial services	ND	ND	ND	ND	ND	ND
Architectural and engineering activities and related technical consultancy	Infrastructure builds	9.0	1	8.0	1	9.0	1
	Infrastructure holdings	ND	ND	ND	ND	ND	ND
	Infrastructure maintenance contracts	6.0	0	ND	ND	ND	ND
Building completion and finishing	Infrastructure builds	9.0	1	8.0	1	9.0	1
	Infrastructure maintenance contracts	6.0	0	ND	ND	ND	ND
Construction of buildings	Construction	9.0	1	8.0	1	ND	ND
	Real estate activities	9.0	1	ND	ND	ND	ND
Demolition and site preparation	Infrastructure builds	9.0	1	8.0	1	9.0	1
	Infrastructure maintenance contracts	6.0	0	ND	ND	ND	ND
Electrical, plumbing and other construction installation activities	Infrastructure builds	9.0	1	8.0	1	9.0	1
	Infrastructure maintenance contracts	6.0	0	ND	ND	ND	ND
Extraction of crude petroleum	Integrated oil and gas	9.0	1	9.0	1	9.0	1
	Oil and gas exploration surveys	8.0	1	8.0	1	6.0	0
Extraction of natural gas	Integrated oil and gas	9.0	1	9.0	1	9.0	1
	Oil and gas exploration surveys	8.0	1	8.0	1	6.0	0
Fund management activities	Financial services	ND	ND	ND	ND	ND	ND
Installation of industrial machinery and equipment	Infrastructure holdings	ND	ND	ND	ND	ND	ND

		Land/Water/Sea use change					
		Terrestrial use		Freshwater use		Marine use	
Insurance	Financial services	ND	ND	ND	ND	ND	ND
	Managed health care	ND	ND	ND	ND	ND	ND
Landscape care and maintenance service activities	Environmental and facilities services	ND	ND	ND	ND	ND	ND
Logging	Large-scale forestry	9.0	1	ND	ND	ND	ND
	Production of forest and wood-based products	8.0	1	ND	ND	ND	ND
	Small-scale forestry	9.0	1	ND	ND	ND	ND
Manufacture of basic iron and steel	Iron metal production	ND	ND	ND	ND	ND	ND
	Steel production	ND	ND	ND	ND	ND	ND
Manufacture of glass and glass products	Catalytic cracking, fractional distillation and crystallisation	7.0	0	ND	ND	ND	ND
	Construction materials production	9.0	1	8.0	1	8.0	1
	Metal processing	ND	ND	ND	ND	ND	ND
Manufacture of non-metallic mineral products n.e.c.	Construction materials production	9.0	1	8.0	1	8.0	1
	Electronics and hardware production	ND	ND	ND	ND	ND	ND
	Glass making	ND	ND	ND	ND	ND	ND
	Houseware and specialities production	ND	ND	ND	ND	ND	ND
Manufacture of paper and paper products	Paper packaging production	ND	ND	ND	ND	ND	ND
	Production of paper products	ND	ND	ND	ND	ND	ND
Manufacture of products of wood, cork, straw and plaiting materials	Glass making	ND	ND	ND	ND	ND	ND
	Houseware and specialities production	ND	ND	ND	ND	ND	ND
	Large-scale forestry	9.0	1	ND	ND	ND	ND
	Paper packaging production	ND	ND	ND	ND	ND	ND
	Production of forest and wood-based products	8.0	1	ND	ND	ND	ND
	Small-scale forestry	9.0	1	ND	ND	ND	ND

		Land/Water/Sea use change					
		Terrestrial use		Freshwater use		Marine use	
Manufacture of wearing apparel, except fur apparel	Jewellery production	ND	ND	ND	ND	ND	ND
	Natural fibre production	8.0	1	ND	ND	ND	ND
	Synthetic fibre production	ND	ND	ND	ND	ND	ND
Manufacture of wiring and wiring devices	Electronics and hardware production	ND	ND	ND	ND	ND	ND
Mining and quarrying n.e.c.	Iron extraction	9.0	1	ND	ND	ND	ND
	Mining	9.0	1	8.0	1	ND	ND
Mining of hard coal	Mining	9.0	1	8.0	1	ND	ND
Mining of non-ferrous metal ores	Mining	9.0	1	8.0	1	ND	ND
Quarrying of stone, sand and clay	Construction materials production	9.0	1	8.0	1	8.0	1
Real estate activities on a fee or contract basis	Real estate activities	9.0	1	ND	ND	ND	ND
Real estate activities with own or leased property	Real estate activities	9.0	1	ND	ND	ND	ND
Restaurants and mobile food service activities	Restaurant provision	ND	ND	ND	ND	ND	ND
Support activities for other mining and quarrying	Iron extraction	9.0	1	ND	ND	ND	ND
	Mining	9.0	1	8.0	1	ND	ND
Waste treatment and disposal	Environmental and facilities services	ND	ND	ND	ND	ND	ND
Wireless telecommunications activities	Telecommunication and wireless services	7.0	0	ND	ND	ND	ND

Table A.5: SBTN Materiality Screening Tool: Indexed pressure score and materiality rating by UK real estate industry activity

		Resource Use		Climate change		Pollution						Invasives and Other			
		Water use		GHG emissions		Water pollutants		Soil pollutants		Solid waste		Disturbances		Biological alterations	
ISIC Group (Alphabetical)	Production process (associated with each 'group')	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)
Activities auxiliary to financial service activities, except insurance and pension funding	Financial services	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
Activities auxiliary to insurance and pension funding	Financial services	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
Architectural and engineering activities and related technical consultancy	Infrastructure builds	8.0	1	9.0	1	7.0	1	7.0	1	6.0	0	7.0	1	6.0	1
	Infrastructure holdings	8.0	1	ND	ND	7.0	1	7.0	1	6.0	0	ND	ND	ND	ND
	Infrastructure maintenance contracts	7.0	0	9.0	1	6.0	0	6.0	1	ND	ND	ND	ND	ND	ND
Building completion and finishing	Infrastructure builds	8.0	1	9.0	1	7.0	1	7.0	1	6.0	0	7.0	1	6.0	1
	Infrastructure maintenance contracts	7.0	0	9.0	1	6.0	0	6.0	1	ND	ND	ND	ND	ND	ND
Construction of buildings	Construction	7.0	0	9.0	1	6.0	0	6.0	1	7.0	1	7.0	1	6.0	1
	Real estate activities	ND	ND	9.0	1	6.0	0	6.0	1	7.0	1	ND	ND	6.0	1
Demolition and site preparation	Infrastructure builds	8.0	1	9.0	1	7.0	1	7.0	1	6.0	0	7.0	1	6.0	1
	Infrastructure maintenance contracts	7.0	0	9.0	1	6.0	0	6.0	1	ND	ND	ND	ND	ND	ND

		Resource Use		Climate change		Pollution						Invasives and Other			
		Water use		GHG emissions		Water pollutants		Soil pollutants		Solid waste		Disturbances		Biological alterations	
ISIC Group (Alphabetical)	Production process (associated with each 'group')	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)
Electrical, plumbing and other construction installation activities	Infrastructure builds	8.0	1	9.0	1	7.0	1	7.0	1	6.0	0	7.0	1	6.0	1
	Infrastructure maintenance contracts	7.0	0	9.0	1	6.0	0	6.0	1	ND	ND	ND	ND	ND	ND
Extraction of crude petroleum	Integrated oil and gas	9.0	1	9.0	1	8.0	1	7.0	1	8.0	1	7.0	1	ND	ND
	Oil and gas exploration surveys	9.0	1	9.0	1	9.0	1	7.0	1	8.0	1	7.0	1	ND	ND
Extraction of natural gas	Integrated oil and gas	9.0	1	9.0	1	8.0	1	7.0	1	8.0	1	7.0	1	ND	ND
	Oil and gas exploration surveys	9.0	1	9.0	1	9.0	1	7.0	1	8.0	1	7.0	1	ND	ND
Fund management activities	Financial services	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
Installation of industrial machinery and equipment	Infrastructure holdings	8.0	1	ND	ND	7.0	1	7.0	1	6.0	0	ND	ND	ND	ND
Insurance	Financial services	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
	Managed health care	ND	ND	9.0	1	6.0	0	6.0	1	ND	ND	ND	ND	ND	ND
Landscape care and maintenance service activities	Environmental and facilities services	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
Logging	Large-scale forestry	ND	ND	9.0	1	7.0	1	ND	ND	ND	ND	ND	ND	ND	ND
	Production of forest and wood-based products	ND	ND	9.0	1	7.0	1	7.0	1	ND	ND	ND	ND	ND	ND
	Small-scale forestry	ND	ND	9.0	1	7.0	1	6.0	1	ND	ND	ND	ND	ND	ND

		Resource Use		Climate change		Pollution						Invasives and Other			
		Water use		GHG emissions		Water pollutants		Soil pollutants		Solid waste		Disturbances		Biological alterations	
ISIC Group (Alphabetical)	Production process (associated with each 'group')	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)
Manufacture of basic iron and steel	Iron metal production	9.0	1	9.0	1	6.0	0	ND	ND	7.0	1	7.0	1	ND	ND
	Steel production	8.0	1	9.0	1	ND	ND	ND	ND	7.0	1	ND	ND	ND	ND
Manufacture of glass and glass products	Catalytic cracking, fractional distillation and crystallisation	8.0	1	9.0	1	7.0	1	8.0	1	7.0	1	ND	ND	ND	ND
	Construction materials production	8.0	1	9.0	1	6.0	0	ND	ND	7.0	1	7.0	1	ND	ND
	Metal processing	7.0	0	9.0	1	6.0	0	6.0	1	7.0	1	ND	ND	ND	ND
Manufacture of non-metallic mineral products n.e.c.	Construction materials production	8.0	1	9.0	1	6.0	0	ND	ND	7.0	1	7.0	1	ND	ND
	Electronics and hardware production	ND	ND	ND	ND	7.0	1	7.0	1	6.0	0	6.0	0	ND	ND
	Glass making	9.0	1	9.0	1	7.0	1	ND	ND	5.0	0	ND	ND	ND	ND
	Houseware and specialities production	9.0	1	ND	ND	6.0	0	6.0	1	6.0	0	ND	ND	ND	ND
Manufacture of paper and paper products	Paper packaging production	9.0	1	ND	ND	7.0	1	8.0	1	ND	ND	ND	ND	ND	ND
	Production of paper products	9.0	1	ND	ND	7.0	1	7.0	1	ND	ND	ND	ND	ND	ND

		Resource Use		Climate change		Pollution						Invasives and Other			
		Water use		GHG emissions		Water pollutants		Soil pollutants		Solid waste		Disturbances		Biological alterations	
ISIC Group (Alphabetical)	Production process (associated with each 'group')	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)
Manufacture of products of wood, cork, straw and plaiting materials	Glass making	9.0	1	9.0	1	7.0	1	ND	ND	5.0	0	ND	ND	ND	ND
	Houseware and specialities production	9.0	1	ND	ND	6.0	0	6.0	1	6.0	0	ND	ND	ND	ND
	Large-scale forestry	ND	ND	9.0	1	7.0	1	ND	ND	ND	ND	ND	ND	ND	ND
	Paper packaging production	9.0	1	ND	ND	7.0	1	8.0	1	ND	ND	ND	ND	ND	ND
	Production of forest and wood-based products	ND	ND	9.0	1	7.0	1	7.0	1	ND	ND	ND	ND	ND	ND
	Small-scale forestry	ND	ND	9.0	1	7.0	1	6.0	1	ND	ND	ND	ND	ND	ND
Manufacture of wearing apparel, except fur apparel	Jewellery production	ND	ND	ND	ND	6.0	0	6.0	1	6.0	0	ND	ND	ND	ND
	Natural fibre production	9.0	1	ND	ND	7.0	1	6.0	1	6.0	0	ND	ND	ND	ND
	Synthetic fibre production	8.0	1	ND	ND	7.0	1	6.0	1	7.0	1	ND	ND	ND	ND
Manufacture of wiring and wiring devices	Electronics and hardware production	ND	ND	ND	ND	7.0	1	7.0	1	6.0	0	6.0	0	ND	ND
Mining and quarrying n.e.c.	Iron extraction	9.0	1	9.0	1	ND	ND	ND	ND	ND	ND	7.0	1	ND	ND
	Mining	9.0	1	9.0	1	8.0	1	7.0	1	8.0	1	7.0	1	6.0	1
Mining of hard coal	Mining	9.0	1	9.0	1	8.0	1	7.0	1	8.0	1	7.0	1	6.0	1
Mining of non-ferrous metal ores	Mining	9.0	1	9.0	1	8.0	1	7.0	1	8.0	1	7.0	1	6.0	1
Quarrying of stone, sand and clay	Construction materials production	8.0	1	9.0	1	6.0	0	ND	ND	7.0	1	7.0	1	ND	ND

		Resource Use		Climate change		Pollution						Invasives and Other			
		Water use		GHG emissions		Water pollutants		Soil pollutants		Solid waste		Disturbances		Biological alterations	
ISIC Group (Alphabetical)	Production process (associated with each 'group')	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)	Indexed pressure score	Materiality ratings (0 or 1)
Real estate activities on a fee or contract basis	Real estate activities	ND	ND	9.0	1	6.0	0	6.0	1	7.0	1	ND	ND	6.0	1
Real estate activities with own or leased property	Real estate activities	ND	ND	9.0	1	6.0	0	6.0	1	7.0	1	ND	ND	6.0	1
Restaurants and mobile food service activities	Restaurant provision	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
Support activities for other mining and quarrying	Iron extraction	9.0	1	9.0	1	ND	ND	ND	ND	ND	ND	7.0	1	ND	ND
	Mining	9.0	1	9.0	1	8.0	1	7.0	1	8.0	1	7.0	1	6.0	1
Waste treatment and disposal	Environmental and facilities services	ND	ND	ND	ND	ND	ND	ND	ND	6.0	0	ND	ND	ND	ND
Wireless telecommunications activities	Telecommunication and wireless services	ND	ND	ND	ND	3.0	0	4.0	0	6.0	0	ND	ND	8.0	1

Appendix G: Aligning Response, Magnitude and Exposure Metrics

Table B.1: Example matrix of connections between exposure, magnitude, and response metrics following the LEAP approach

Dependencies and impacts identified	Exposure indicators (dependencies and impacts)	Magnitude indicators (risks and opportunities)	Risk mitigation action / opportunity addressed (response)	Associated response indicators	Associated targets	Progress against targets
Risk: Organisation identifies that it is developing land for housing purposes in close proximity to a biodiversity hotspot that supports pollinators on which local agricultural practices depend Risk rating: High Risk timescale: Short-term	Total Net % Change (Biodiversity Units) Extent of terrestrial ecosystems converted/ degraded by ecosystem type and business activity (absolute and % change) Measurement of the ecosystem condition, e.g. Mean Species Abundance (MSA), species richness (absolute and % change) Presence/density of trees/ shrubs (absolute and % change) Vegetation index (absolute and % change) Area of crops pollinated, by type of crop (km^2 or equivalent)	Physical risk: Value of assets/ revenues dependent on the area Increased capital expenditure on adaptation (e.g. mechanical or hand pollination) Reputation (transition) risk: Increased operational costs due to reduction in loyalty from stakeholders Policy and legal (transition) risk: Compliance costs Description and costs related to loss of operating areas Costs of relocating operations	Organisation assesses different response options and decides to set-up a sustainable management programme in the area, create an area-specific biodiversity net gain target (above minimum requirement), create a commitment to no conversion of natural ecosystems and monitor biodiversity levels in the area twice a year	Performance against commitment for biodiversity gain (baseline y-1) Number of meaningful engagements with affected stakeholders, including rightsholders and local communities, when assessing biodiversity-related impacts % of affected stakeholders meaningfully engaged in area Extent, duration and monitoring frequency of ecosystem restoration projects	Achieve 20% biodiversity net gain across the area by 2025	Biodiversity net gain in area (baseline y-1)

(Adapted from original)[55]

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Glossary & Abbreviations

Glossary

Acute Risks: Short-term or event-based nature-related risks, such as extreme weather events (e.g., floods, storms, wildfires) that can disrupt operations or supply chains.

Biodiversity Net Gain (BNG): A development approach that aims to leave the natural environment in a measurably better state than before, typically achieved by conserving and enhancing habitats or species.

Biodiversity Risk Filter (BRF): A tool provided by WWF to assess the biodiversity risks faced by businesses based on their sectors and value chains.

Chronic Risks: Long-term nature-related risks, such as gradual environmental degradation (e.g., rising sea levels, desertification) that can have ongoing impacts on assets and operations.

Climate-Nature Nexus: The interrelationship between climate change and nature, where nature plays a central role in both mitigating climate change and enhancing resilience to its impacts.

Corporate Sustainability Reporting Directive (CSRD): A European Union regulation requiring companies to report on sustainability factors, including nature and biodiversity impacts, within their value chains.

Dependencies: The reliance of an organisation on ecosystem goods or services, such as the need for clean water or raw materials.

Double Materiality: An approach in sustainability reporting where organisations must report both financial impacts and broader environmental and societal effects.

Ecosystem Services: The benefits that humans derive from ecosystems, such as water filtration, pollination, flood management, and climate regulation.

ENCORE: A tool that assesses how environmental change impacts economic activities, particularly through the degradation of ecosystem services.

Environmental, Social, and Governance (ESG): A framework for evaluating an organisation's performance in sustainability-related areas, including nature-related risks and opportunities.

Global Biodiversity Framework (GBF): A framework, including targets like Target 15, aiming to halt and reverse biodiversity loss globally, introduced at the Kunming-Montreal agreement.

Green Finance: Financial instruments and investments that support environmental objectives, such as conservation, restoration, and the sustainable use of natural resources.

Impact Pathways: The connections between economic activities, nature loss, and financial risk, showing how an organisation's activities can affect the state of natural systems.

LEAP Approach: A four-step framework used by TNFD to help organisations Locate, Evaluate, Assess, and Prepare in relation to nature-related risks, opportunities, and disclosures.

Materiality: The principle that focuses on the significance of an issue or factor based on its potential to influence decision-making, financial performance, or strategic outcomes. It can be framed as "single" (financial) or "double" (social and environmental impacts).

Nature-based Solutions (NbS): Actions that protect, sustainably manage, and restore ecosystems to address societal challenges such as climate change and biodiversity loss.

Nature-related Risks: Risks that arise from the degradation or depletion of natural systems, which may have financial implications. They include physical risks (acute and chronic), transitional risks, and systemic risks related to ecosystem stability.

Physical Risks: Risks resulting from physical environmental changes, including both acute (short-term events like floods or wildfires) and chronic (long-term effects such as rising temperatures or sea levels) impacts.

Principal Adverse Impacts (PAIs): Negative effects that an investment or activity may have on sustainability factors, which must be disclosed under the EU Sustainable Finance Disclosure Regulation (SFDR).

Science-Based Targets Network (SBTN): A network that provides guidance for setting targets that align corporate actions with the global need to reverse nature loss and support biodiversity.

Sustainability Accounting Standards Board (SASB): A board that develops standards to guide the disclosure of financially material sustainability information by companies to their investors.

Taskforce on Nature-related Financial Disclosures (TNFD): An initiative launched in 2021 to create a framework for organisations to report and manage risks related to nature, analogous to the Taskforce on Climate-related Financial Disclosures (TCFD).

Transition Risks: Risks arising from the shift toward a more sustainable economy, including changes in policy, regulations, market conditions, technology, and reputation.

Transmission Channels: The pathways through which nature-related risks, such as disruptions to supply chains or ecosystem services, become financial risks to an organisation.

Abbreviations

BNG: Biodiversity Net Gain

BRF: Biodiversity Risk Filter

CAPEX: Capital Expenditure

CSRD: Corporate Sustainability Reporting Directive

EPCs: Energy Performance Certificates

EPDs: Environmental Product Declarations

ESG: Environmental Social and Governance

EU SFDR: European Union Sustainable Finance Disclosure Regulation

FASB: Financial Accounting Standards Board

GBF: Global Biodiversity Framework

GRI: Global Reporting Initiative

HICL: High Impact Commodity List

IASB: International Accounting Standards Board

ISSB: International Sustainability Standards Board

LEAP: Locate Evaluate Assess Prepare (approach used in TNFD)

MST: Materiality Screening Tool

NbS: Nature-based Solutions

NDVI: Normalized Difference Vegetation Index

PAIs: Principal Adverse Indicators

SASB: Sustainability Accounting Standards Board

SBTN: Science-Based Targets Network

SDGs: Sustainable Development Goals

TCFD: Taskforce on Climate-related Financial Disclosures

TNFD: Taskforce on Nature-related Financial Disclosures

UNEP FI: United Nations Environment Programme Finance Initiative

UNDP: United Nations Development Programme

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