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Integrating Nature

The case for action on nature-related financial risks

NATURE POSITIVE

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Contents

Executive Summary

Our economy depends on the goods and services nature provides. Yet one-fifth of these services are on the verge of collapse.[1]

To avoid irreparable damage, the value of nature must be integrated into every financial decision. This integration can ensure capital is mobilised away from destructive activities and towards those that restore and protect nature.

This paper equips senior management within financial institutions with the business case for integrating nature-related risks into financial decisions. Since 2019, CISL has been working with financial institutions to support the integration of nature into financial systems (see Figure 1). Leading banks and investment firms – members of the Banking Environment Initiative and Investment Leaders Group – have been using CISL's Handbook for Nature-related Financial Risks to assess the financial materiality of nature loss.

Using these resources, banks and investment firms developed use cases showing that:

1. **Financial firms can already measure nature-related financial risks with existing tools and data.**
2. **Nature loss creates material financial risks, leading to valuation declines approaching 50 per cent and multiple-notch credit rating downgrades.**
3. **Risks quantified are the tip of the iceberg; wider risks to tax revenues, supply chains, social cohesion and financial markets will greatly amplify the negative consequences of nature loss.**

Momentum to finance nature protection and restoration is building, creating opportunities to facilitate and reallocate capital to nature-positive companies. The Taskforce for Nature-related Financial Disclosures (TNFD) is underway and new government commitments will be made to protect and restore nature at the COP15 for Biodiversity.

Now is the time for the financial sector to lead; integrating nature into decision making, managing nature-related risks and catalysing capital reallocation that protects and restores nature.

Figure 1: CISL nature-related financial risks R&D programme

1. Why assess nature-related financial risks

Nature is in peril

We depend on the goods and services nature provides. Yet mainstream economics, our method for managing the collective home, fails to account for nature, our protector and provider.[i]

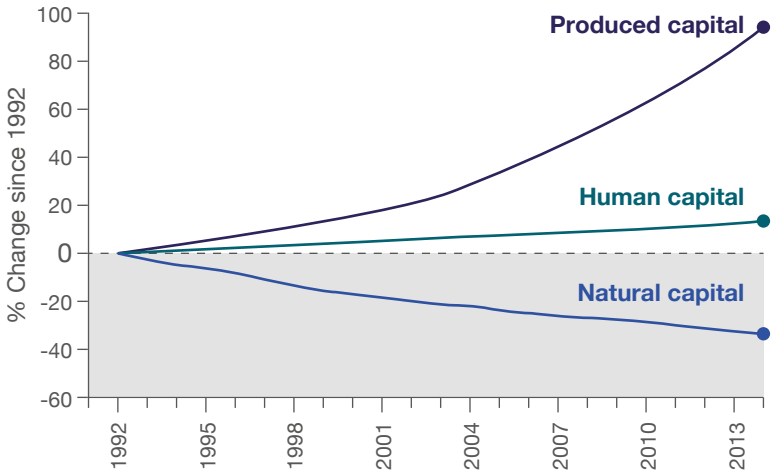
This failure has incentivised extractive economic activity, converting natural capital into produced capital (see Figure 2).

Nature loss poses highly material financial risks

As our extraction-based economy has accelerated, so has the degradation of nature which provides the goods and services on which we depend. If a further three per cent of the Amazon is deforested, the local rainfall cycle could fail and, with it, local food production.[2] The cost of passing this point, where rainforest becomes savannah, is estimated at USD 257 billion for the region alone.[3] This is before the global consequences for food security and climate change are factored in, which will have a significant multiplying effect on the GDP at risk. Meanwhile, protecting the forest adequately generates USD 329 billion of additional wealth.[4]

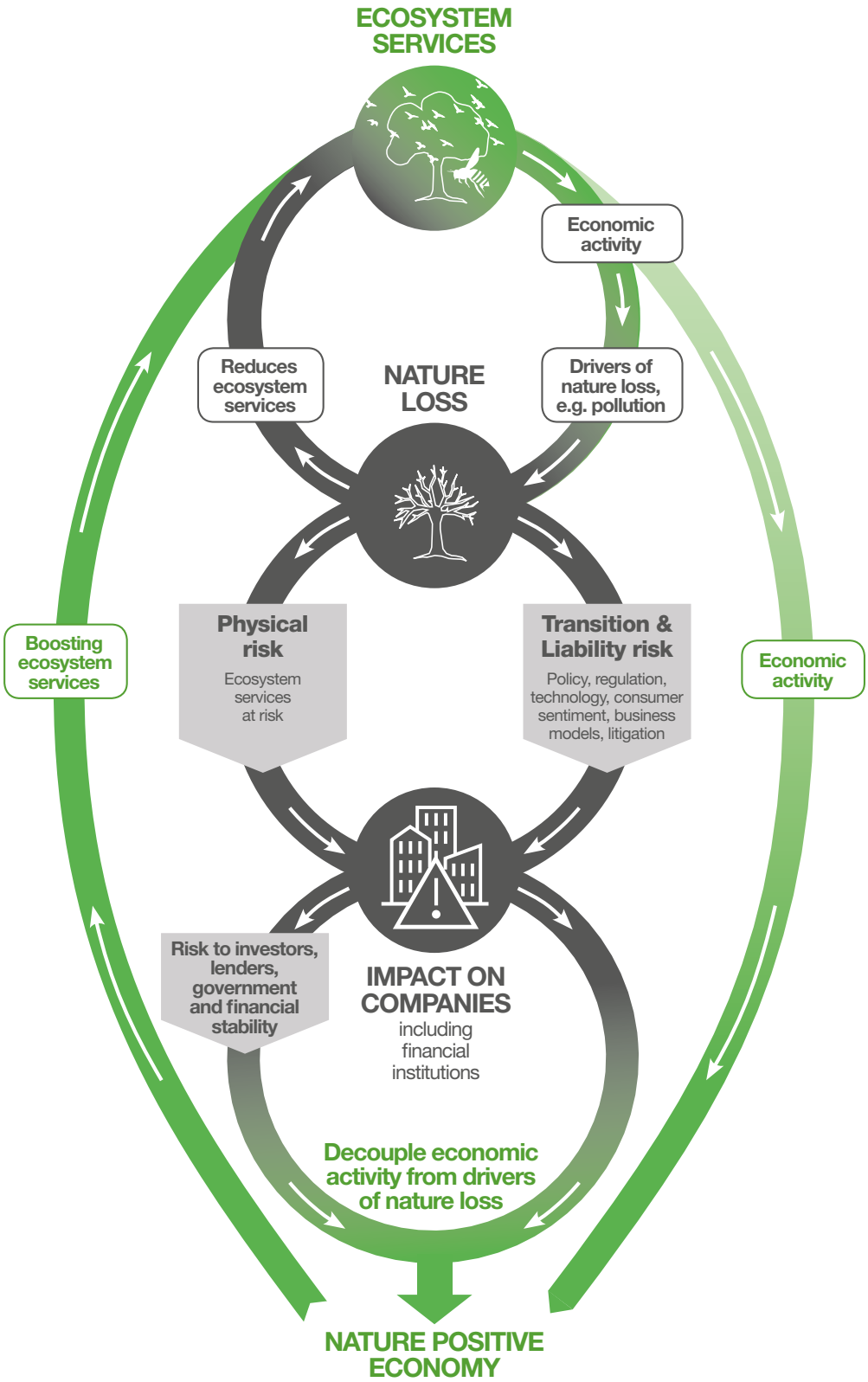
A recent assessment by Banque de France showed 42 per cent of securities held by French financial institutions are highly or very highly dependent on nature.[5] This dependence exposes these securities to the physical, transition and liability risks stemming from nature loss, as demonstrated by use cases conducted at CISL. Integrating these nature-related risks into financial decision-making will internalise the cost of nature loss, driving a reorientation of portfolios that can create a nature-positive economy (see Figure 3).

Figure 2: Conversion of natural capital into produced capital



[i] This analogy and Figure 2 owe an intellectual debt to the Dasgupta Review of the Economics of Biodiversity.

*Figure 3: Connections between economic activity, nature and financial risks. (**Handbook**, CISL 2021)*



Opportunity to finance the transition to a nature-positive economy

The business case for financing the restoration and protection of nature is about more than mitigating financial risks. The World Economic Forum (WEF) estimates that protecting and restoring nature could result in USD 10.1 trillion of economic activity.[6] Financial institutions that pioneer products, services and investment strategies that accelerate the shift to a nature-positive economy position themselves as the leading financiers of that economy. Integrating nature-related risks into financial decisions will help price and drive these pioneering actions.

Policy and regulation to protect nature: already here and more around the corner

Policies to protect and restore nature are imminent. In 2022, the UN Biodiversity COP looks set to halt and reverse nature loss by 2030, whilst in the EU, agendas such as the Farm to Fork Strategy aim to create a nature-positive food system.[ii] (See Box 1 for definition of nature-positive.)

Mandated disclosures that support policy goals are also emerging. In France, Article 29 of the Law on Energy and Climate requires that biodiversity-related risks and impacts be disclosed by financial institutions, whilst TCFD disclosures include financed emissions linked to land use change, such as deforestation.

Meanwhile, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) has conducted research to support the expansion of scenarios that inform climate stress testing to include the risks of nature loss.

Voluntary initiatives and targets: action underway

The Taskforce for Nature-related Financial Disclosures (TNFD) has been launched. During 2022, TNFD is piloting a beta framework, first published in March, that will enable financial institutions to report on their dependence and impact upon nature. Due for publication in 2023, the final version of the TNFD framework will be shaped by a broad group of corporates and financial institutions and build on research underway by official knowledge partners, including CISL's research programme on Nature-related Financial Risks. The framework could form the basis for mandated disclosures, as has been the case with TCFD.

Box 1: Nature-positive | Definition

Nature-positive means halting and reversing the loss of nature by 2030 so that species and ecosystems begin to recover. It is a new operating model based on regeneration, resilience and circularity not extraction, destruction and pollution.

A nature-positive economy is one in which businesses, governments and others take action at scale to reduce and remove the drivers and pressures fuelling the degradation of nature, and work to actively improve the state of nature and the ecosystem services it provides.

[ii] The EU Farm to Fork Strategy is the subject of a nature-related financial risk use case undertaken by Deutsche Bank and UBP with CISL.

Meanwhile, the Science Based Target Network (SBTN) is creating guidance for nature-positive target setting, complementing UNEP FI.[iii, 7] Furthermore:

- data and tools exist to assess nature-related risks.
- natural capital accounting approaches are aligning.[iv]

As it becomes easier to identify nature-related risks, so, by extension, it becomes easier for policymakers, regulators, citizens and shareholders to hold those not taking action to account.

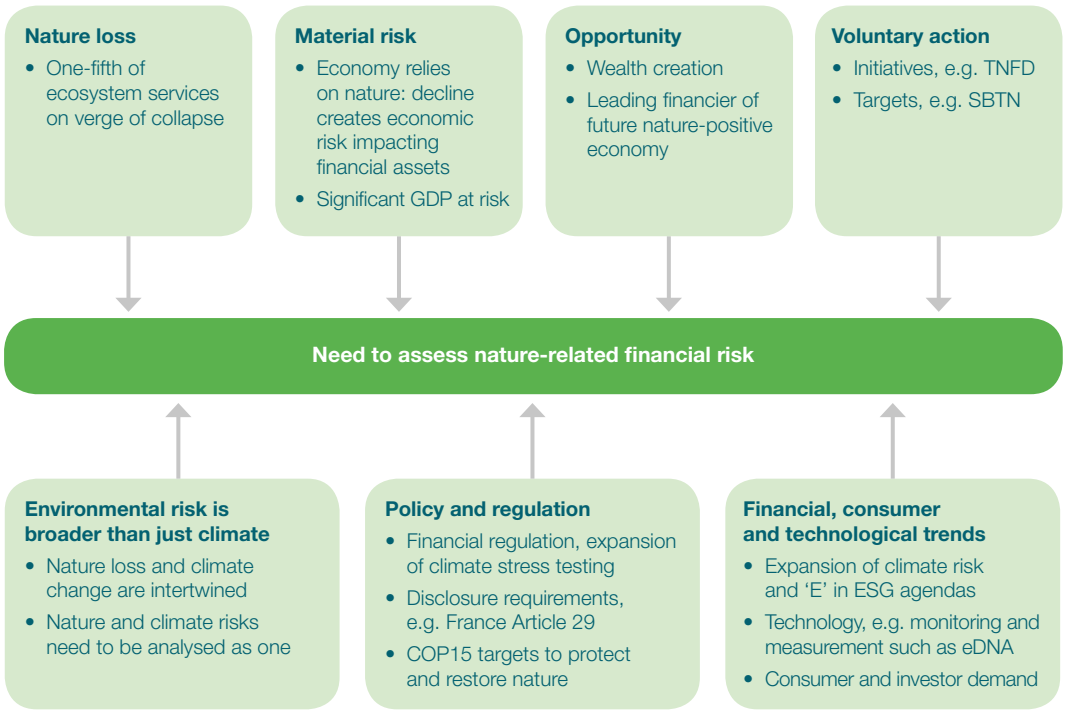
For further details about initiatives for financial institutions, see the Finance for Biodiversity overview.

Financial, consumer and technological trends

Investors are increasingly recognising that the 'E' in ESG covers both nature and climate. Funds from the likes of Mirova, UBP and the HSBC-Pollination partnership are now looking to capture investor demand and mainstream nature outside impact investment strategies.[v]

Meanwhile, ethical products are winning market share and the cost of producing food with a lower impact on nature, such as alternative proteins, is decreasing.[8] Advances in eDNA, remote sensing, satellite monitoring and data science make it possible to know what is happening to nature at the beginning of supply chains at ever lower cost.

Figure 4: Why assess nature-related financial risks?



[iii] UNEP FI have previously covered the various voluntary, national-level and global targets on biodiversity. See https://www.unepfi.org/publications/banking-publications/beyond-business-as-usual-biodiversity-targets-and-finance/

[iv] See Align and PBAF, in particular, for the alignment approaches. For a definition of natural capital, see the CISL Handbook for Nature-related Financial Risks.

[v] For further details of the financial products and strategies funding nature-positive economic activities, see BIOFIN, Global Canopy's Little Book of Investing in Nature and WWF's Bankable Nature Solutions.

2. How to assess nature-related financial risks

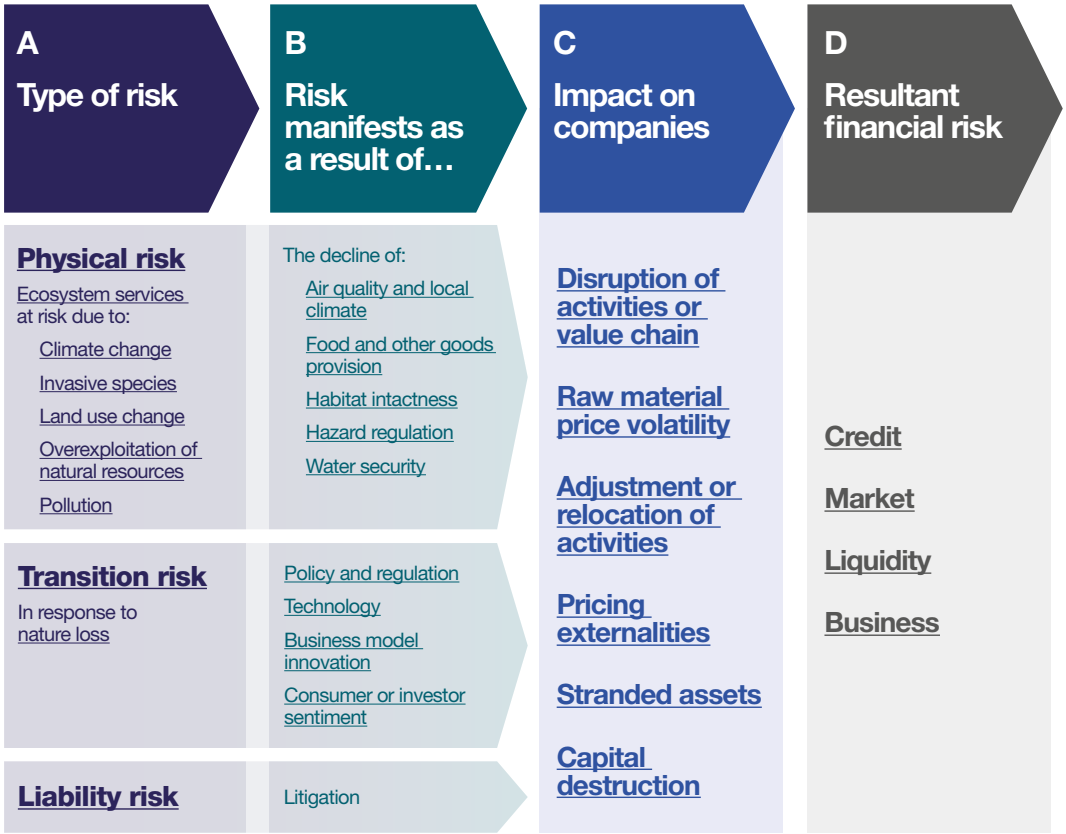
CISL Handbook: enabling financial institutions to identify nature-related risks

The CISL Handbook for Nature-related Financial Risks makes scientific knowledge about nature loss accessible to the financial community, providing detailed explanations and examples of how nature loss leads to financial loss.

Using the Handbook and its framework (see Figure 5), financial institutions have created use cases quantifying specific nature-related financial risks, such as how water stress exposes East Asian heavy industry to multiple-notch credit rating downgrades.

With TNFD piloting its framework through 2022, consensus on how to identify nature-related risks will emerge. This consensus will grow the bank of use cases, enabling more institutions to begin integrating nature loss into financial risk management.

*Figure 5: Framework for identifying nature-related financial risks (**Handbook**, CISL 2021)*



Nature loss becomes a financial risk when physical, transition and liability risks manifest [columns A->B], causing a negative impact on companies, households and financial institutions [C] that poses credit, market, liquidity and business risks [D].

Financial institutions are exposed via loans, debt and/or equity holdings if revenues from financial services decline, operations are disrupted or their property is damaged.

For physical types of risk, there are five drivers of nature loss [A], resulting in the decline of five types of services [B].

The six types of impact on companies [C] then act as transmission channels for financial risks [D].

Tools to map nature-related risk exposure

Tools exist to map exposure to nature-related risks across portfolios, including:

- ENCORE, which scores the dependence of different sub-sectors upon the variety of goods and services that nature provides.
- Moody's Environmental Heat Map, which indicates the exposure of rated debt to nature-related risks.
- SASB, where the materiality map flags sectors exposed to environmental issues such as wastewater management.

AON and CISL used ENCORE to analyse the dependence of financial market indices on the goods and services nature provides, highlighting that:

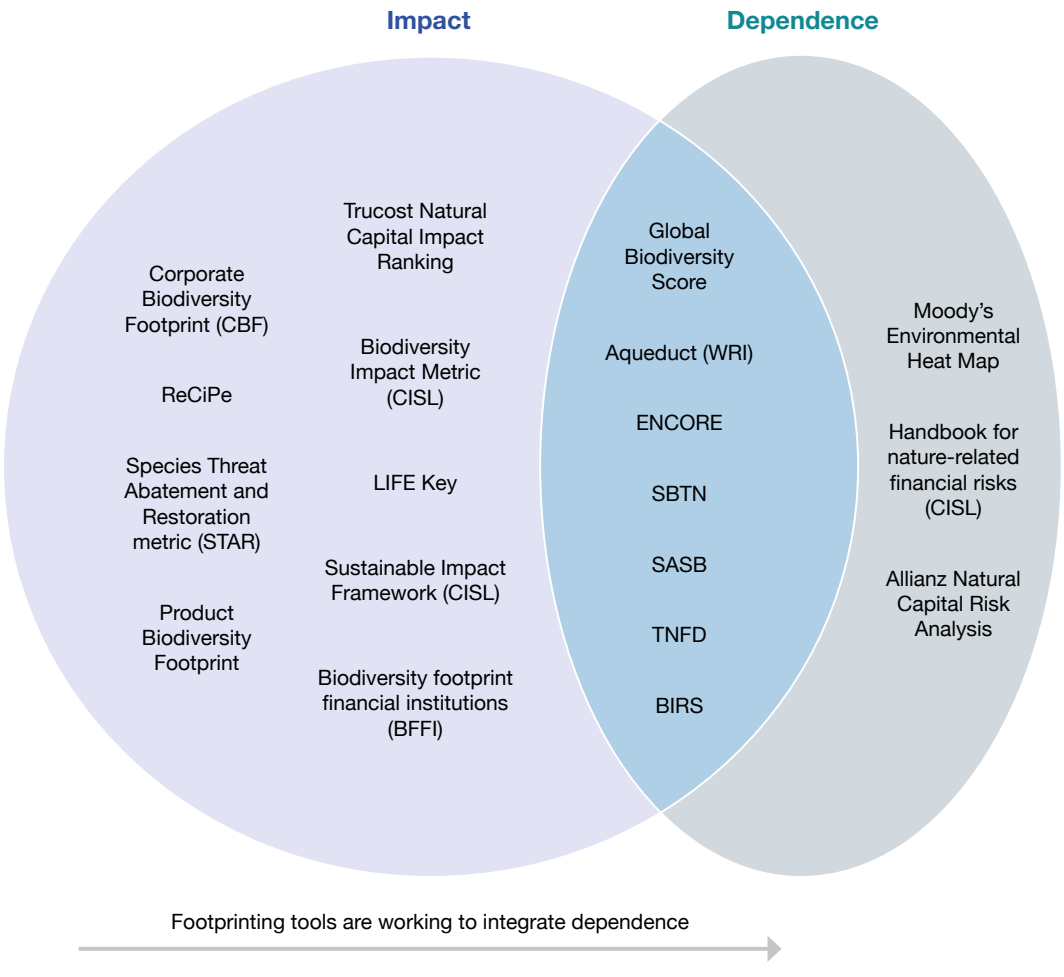
- water insecurity, caused by multiple factors (not only climate change), poses the biggest threat to equity value.

See insights from use cases.

Tools also exist to identify the impact of financed companies on nature (see Figure 6), thereby indicating exposure to nature-related transition risks.

For further details about tools available, see the EU Business@Biodiversity Guide.

Figure 6: Tools to measure impact and dependence on nature (author's interpretation)



Data exist to start assessing nature-related risks

Scientific studies and datasets exist to assess some specific nature-related risks, such as land degradation, with ENCORE mapping available data geospatially.

Robeco and CISL utilised public land degradation data and studies of crop yield variance to estimate equity value at risk along agricultural value chains following an extreme weather event.[9,10] Local packaged food company valuations fell by 45 per cent if suppliers were farming degrading land, underscoring the need for those downstream to prioritise soil health upstream.

For physical risks, some scenarios about the health of nature exist

Some forward-looking scenarios exist to assess nature-related risks, such as WRI Aqueduct for water. Using Aqueduct, HSBC and CISL concluded that a sample of heavy industry companies in East Asia would be downgraded to speculative credit ratings if water access were curtailed for even a short period. See insights from use cases.

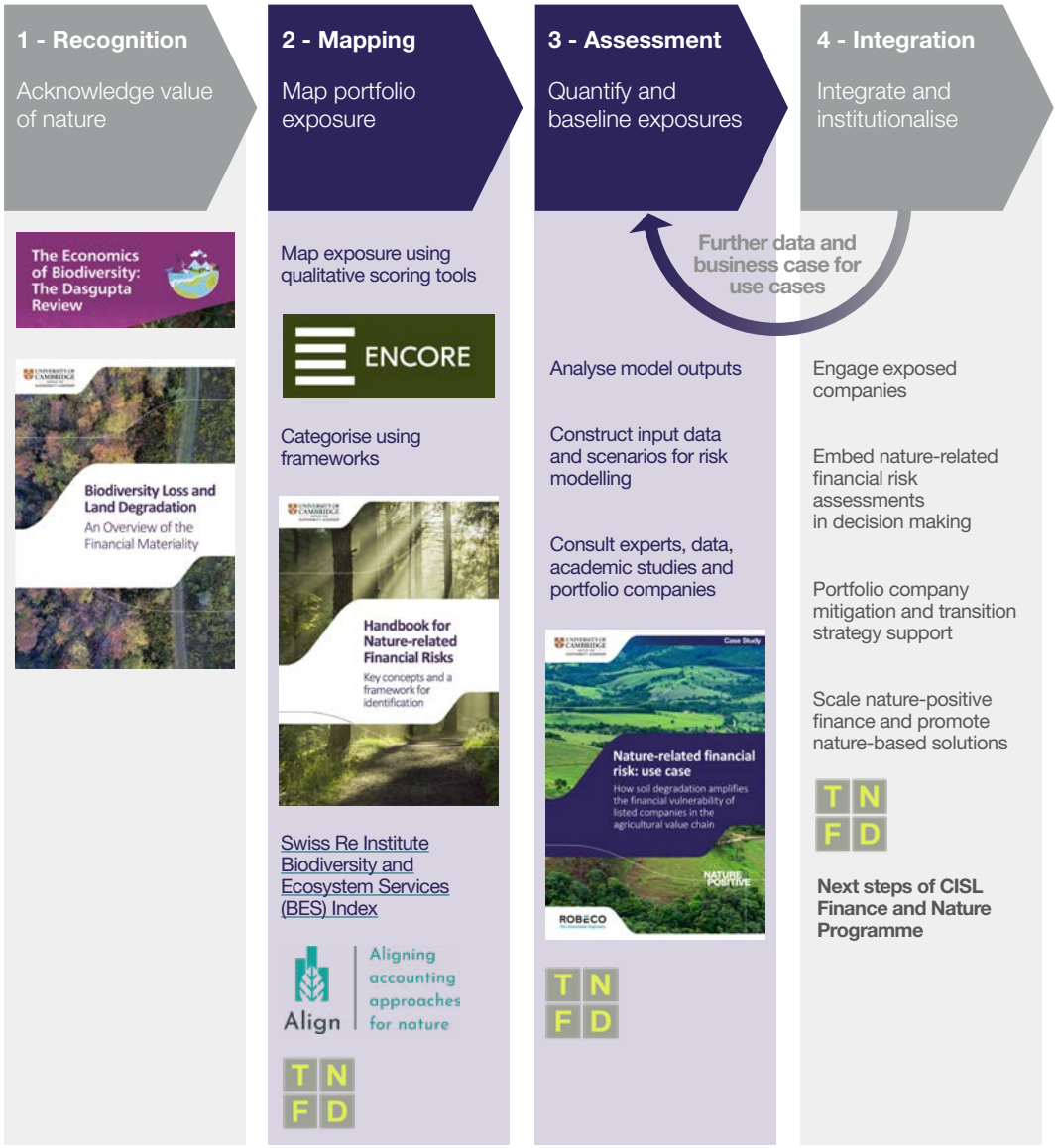
For transition risks, policy-based scenarios provide ready-made input data

With policies emerging to protect and restore nature, policy-based scenarios can be modelled. For example:

- to reverse the negative impacts on nature and create future food security, the EU Farm to Fork Strategy looks set to reduce fertiliser inputs by 20 per cent by 2030. Using this target as the scenario input, UBP, Deutsche Bank and CISL concluded that as much as 46 per cent of fertiliser producers' equity value was at risk.
- countries are banning imports of soft commodities connected with deforestation, the implications and opportunities of which are covered by CISL in Banking Beyond Deforestation.[vi]
- requirements are being set for biodiversity net gains under which new construction must demonstrate an increase in biodiversity.[11]

[vi] The UK looks set to introduce legislation banning the import of soft commodities connected to illegally deforested areas. This has hallmarks of the Lacey Act in the US, which requires importers of wood products to take steps to ensure those products are not connected to deforestation. The EU is also considering how best to legislate to reduce the risk of importing commodities linked to deforestation.

Figure 7: How to begin integrating nature-related risks into financial decision-making (external links included as reference points)



3. Use cases: quantified nature-related financial risks

CISL and member financial institutions have generated four use cases assessing specific nature-related financial risks. As a direct result, participating financial institutions are allocating additional resources to assessing nature-related financial risks.

The use cases show:

1. **Microprudential assessments of nature-related risks are possible**.
2. Nature loss and responses to that loss are causing **double-digit valuation declines in percentage terms and multiple-notch credit rating downgrades**. Nature-related financial risks are highly material.
3. The **tip of the iceberg**: most use cases focus on first-order impacts, meaning wider risks to tax revenues, supply chains, social cohesion and financial markets are unaccounted for.[vii]
4. **Without investment in nature today, exposure to nature-related risks and global warming may become harder and harder to mitigate.** Investing in nature is an opportunity to create resilience.
5. Financiers are uniquely placed to **catalyse economy-wide engagement with nature-related risks** because their portfolio companies and clients mirror the economy as a whole.
6. Identifying nature-related financial risks could **create a pipeline of investable nature-based solutions**.[viii]

Table 1: Overview of CISL's nature-related financial risk use cases

Use Case A | How exposure to degraded land can impact the value of listed companies				
Focus	**Scenario**	**Type and cause of risk**	**Geography**	**Sector**
Vulnerability of degrading land	Extreme weather event leads to yield declines and fertiliser price spikes	Physical *Causes: land use change and overexploitation*	Brazil UK	Agricultural value chain

Highlights (Brazil)

- **Farmers operating largely on degrading land see a valuation decline of 13 per cent**, while **those on healthy soils see a 6 per cent valuation uplift**, mainly due to their ability to capture crop price rises that follow extreme weather.
- **There is a negative valuation impact on smaller packaged food companies of as high as 45 per cent**. Increased purchasing costs are caused by the need to cover supply shortfalls, using increasingly expensive spot markets. The cost cannot be passed on to consumers without risking loss of market share to competitors who are not connected to degrading land.
- **Global trading companies see valuations boosted by 4 per cent**, utilising balance sheet depth and logistics assets to take advantage of temporary crop price rises.

Highlights (UK)

- **Financial losses begin once crop yield declines reach and exceed 27 per cent for two consecutive years**; these crop yield declines are more likely for those on degrading land, pointing to unmeasured financial risks.

[vii] See CISL Handbook for Nature-related Financial Risks for explanation of first- and second-order and system risks.

[viii] See CISL publication Decision-making in a nature-positive world for further information about nature-based solutions.

Use Case B | Impact of water curtailment on the credit rating of heavy industry				
Focus	**Scenario**	**Type and cause of risk**	**Geography**	**Sector**
Water stress	Access to water curtailed for three months	Physical *Causes: land use change, overexploitation, pollution, climate change*	East Asian country with high water stress	Heavy industry

Highlights

- Most of the **companies in the sample are subject to an internal rating downgrade of at least one notch**, with cases of multiple-notch downgrades also occurring.
- The credit risk of a **significant share of companies in the sample moves from investment grade to speculative grade**.
- The sample's **RWA (risk weighted assets) increases by ~20 per cent** in the year immediately following the shock.
- Companies with higher fixed costs are more impacted as the decrease in turnover cannot be absorbed by a reduction in costs.

Use Case C | Impact of EU Farm to Fork Strategy on market value of fertiliser companies				
Focus	**Scenario**	**Type and cause of risk**	**Geography**	**Sector**
Response to land degradation	Twenty per cent lower fertiliser consumption for: 1. EU-27 2. EU-27 and food imports 3. Globe	Transition *Causes: policy response to nature loss*	Global	Fertilisers

Highlights

- Two representative **listed fertiliser companies suffer a valuation decline of between 12 and 46 per cent** across the three scenarios.
- The difference indicated between the two companies is due to different business structures – product offering, existing margins – providing lessons for dynamic risk modelling.
- **Market capitalisation of listed fertiliser industry estimated to decline by USD 25–67bn**.

Use Case D | Mapping different nature-related risks across a portfolio		
Focus	**Geography**	**Sector**
Mapping exposure of financial market indices to different types of nature-related physical risk	Global	Multisector

Highlights

- According to current estimates, **water security is the most important service that nature provides for companies** of the MSCI All Companies World Index (ACWI).
- Water security is also the first and second most important service for the Agriculture, Food and Beverage and Utilities, Energy and Mining segments, respectively, of the MCSI ACWI.
- **Companies with higher ESG ratings have lower exposure to nature-related risks**.

Access detailed reports on each use case.

What do the use cases show

Double-digit valuation declines and multiple-notch downgrades

The use cases made it clear that the risks posed by nature loss are highly material. For example:

- a three-month water curtailment in areas of high water stress in East Asia leads to multiple-notch downgrades for heavy industry.
- up to 45 per cent of equity value is at risk if smaller packaged food companies source from those on degrading land.
- in the process of protecting and restoring nature, the EU Farm to Fork strategy poses risks to those that do not transition their business models to prioritise food system security and sustainability; specifically, as much as 46 per cent of fertiliser company equity value is at risk.

Quantified financial risks are the tip of the iceberg

The use cases likely underestimate the extent of nature-related financial risks. Some of the reasons for this are that they:

- assume balance sheets can withstand nature-related risks indefinitely, eg water curtailment, when in reality some companies will default before the recovery of the natural system. In Cape Town, preventing the curtailment of domestic supply resulted in almost a year of severe restrictions on commercial use.[12]
- could not accurately model cost of capital increases, as these would typically happen following the scenario shock, thereby masking the full negative impact.
- did not quantify loss given default (LGD) across entire portfolios.

Whilst Use Case A, on land degradation, quantified the impact along the agriculture value chain, others were limited to companies directly impacted by the risk, manifesting that:

- if mandated fertiliser reductions are not carefully managed by government policy, food prices could increase, lowering discretionary consumer spending and impacting margins in sectors not connected to agriculture. (Indirect impact outside scope of Use Case C about the EU Farm to Fork Strategy).
- lower water security may lead to heavy users relocating manufacturing assets. This would affect the local job market and lower tax revenues, increasing sovereign debt risk. (Indirect impact outside scope of Use Case B about water curtailment).

Investing in nature is an opportunity to create resilience

Without investment in nature – in resilience – exposure to localised nature-related risks and global warming may become locked in.

- Credit downgrades of Use Case B due to water curtailment indicate that the cost of capital would increase once nature-related risks are recognised.
- Although the subsequent impact on companies of this increasing cost of capital was not modelled, it indicates the need to transition business and operating models today.
- In addition to mitigating financial risk, investment in resilience would provide protection from the extreme weather scenarios of Use Cases A (land degradation) and B (water curtailment).
- As nature-related risks are priced into present-day financial decisions, those firms who took proactive and preventative action would benefit financially.

This highlights the opportunity cost of not investing today to halt and reverse nature loss.

Financiers can catalyse engagement with nature-related risks across the economy

Some major corporates have taken leadership positions that will see their supply chains protect and restore nature, such as Unilever's commitment to have a deforestation-free supply chain by 2023.[ix]

The task today is to mainstream and incorporate the value of nature across the economy. With a footprint across all areas of the global economy – public, private, developed, emerging markets – financial institutions can influence all types and sizes of company. Assessment of nature-related financial risks can begin this influencing process, requiring portfolio companies be engaged about their dependencies and impacts on nature.

In Use Cases A and C, on land degradation and the EU Farm to Fork Strategy, the risk assessment process included engagement with companies. This engagement validated assumptions and catalysed conversations about mitigation strategies, such as revenue diversification by fertiliser companies into advisory services and less environmentally impactful premium products.

Identifying risks could enhance the pipeline of investable nature-based solutions

Identifying nature-related financial risks across the portfolio will create environmental data that are associated with companies and other securities. Whilst the risks posed by nature loss and the companies exposed to nature loss can be different, these data can begin to provide an indication of whether securities have a positive or negative impact on nature.

If the data gathered from the nature-related risk assessment show a company with a positive impact on nature, it could:

1. Allow financiers to identify lending or investment that is already nature-positive, enabling them to structure solutions for financial markets that drive capital toward nature-based solutions (NbS).[x] Doing so can help create market depth for nature-positive securities, in turn enabling liquidity and a secondary market, reducing risk for institutional investors and providing a price signal for the value of nature-positive behaviour.

2. Attract new cash flows, such as robust biodiversity credits, that can be invested in protecting nature and improving resilience. Restoring nature is positive for the climate and mitigating climate change is positive for nature, so the line between carbon and biodiversity credits is likely to overlap in the coming years.

In contrast, indications of negative impacts on nature or significant exposure to nature-related risks could:

- worsen financing terms, acting as an incentive for businesses to transition to nature-positive.
- provide an opportunity for engagement with portfolio companies, during which access to investor demand for NbS is offered to incentivise a shift to a nature-positive business model, complementing the financial case to accelerate the adoption of such models, as covered by a recent CISL diagnostic tool.

[ix] To work toward the protection and restoration of nature in supply chains, CISL is contributing to the UKRI GCRF Trade, Development and the Environment (TRADE) Hub.

[x] NbS are ways of working with natural systems to strengthen them while solving broader problems, such as climate change but also health, social inclusion and more. See the CISL Nature-based Solutions Hub for more information.

4. What is needed to support the integration of nature into financial decision-making

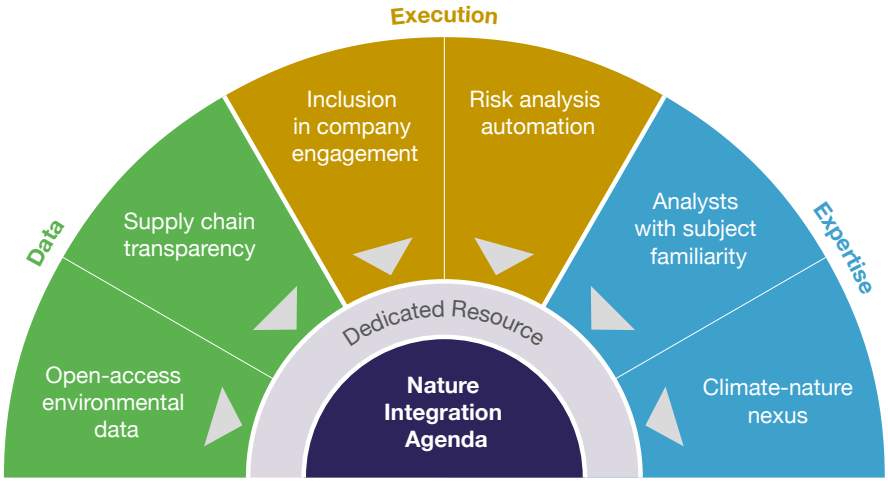
Financial institutions are starting to look for ways to integrate nature considerations into risk assessments. The CISL Handbook on Nature-related Financial Risks and subsequent use cases provide the context for taking the first steps toward integrating nature-related risks into financial decisions.

To accelerate nature integration, it is vital to:

1. **Broaden the environmental risk remit to include both nature and climate considerations**.
2. **Improve supply chain transparency** – it remains too challenging to accurately identify risks along value chains.
3. **Create tools to automate risk assessment** – use cases are too time-consuming to replicate at pace.
4. **Include nature in portfolio company engagement** – with insufficient public data to validate nature-related assessments, conversations with portfolio companies are required.
5. **Generate more open-access environmental data** – intelligence about nature-related risks needs to be economy-wide, otherwise smaller companies risk being more exposed and any transition to nature-positive not inclusive.
6. **Onboard and support motivated risk analysts** – without an active mindset and appropriate time and expertise, the integration of nature into financial models will not be possible.[xi]

Most importantly, **assessing nature-related risks requires dedicated resources** that acknowledge the scale of the financial materiality of nature loss.

Figure 8: What is needed to support the nature integration agenda at financial institutions



[xi] The need for an active mindset in banking to tackle the decarbonisation challenge is addressed by the CISL publication Bank 2030: How to accelerate the transition to a low-carbon economy.

Broaden the environmental risk remit to include both nature and climate

An assessment of environmental sources of risk that analyses climate and nature risks as one is needed, as they are intertwined. Without embedding all sources of environmental risk in financial decision-making, there will be unmeasured and unmanaged risk in portfolios.

Climate change exacerbates nature loss and vice versa. Without recognising the feedback loop, environmental risk analysis is incomplete and unaccounted-for nature-related financial risks will materialise, affecting returns. Use Cases A and B exemplify this.

- Focusing on land degradation and water stress, they quantified financial impacts following extreme weather events.
- The frequency and extremity of extreme weather events increase because of climate change; ergo, global warming exacerbates other drivers of nature loss.
- For instance, the 2018 threat that Cape Town's four million inhabitants would be left without water (known as 'Day Zero') might have been triggered by rainfall deficit, but water stress was already high because of overexploitation and poor management.[13] Day Zero was then delayed by curtailing use – the opposite of overexploitation.

The knowledge gained from analysing climate risk needs to be broadened to recognise (a) the goods and services provided by nature that are at stake and (b) that their decline is driven by many factors.

Improve supply chain traceability

Without data to map connections along supply chains, assessments of nature-related financial risk will show materiality but lack accuracy about which operations present the greatest risk. Use Case A in Brazil, for example, assumed land degradation associated with companies along agricultural supply chains was either entirely connected to degrading soils or entirely connected to healthy soils. Neither will be true, but only through engagement and further data capture will the accurate state of operations become clearer.

Governments can improve supply chain traceability by digitalising trade. Environmental data could then be linked to trade finance transactions, enabling exposures to be traced to nature loss upstream.[xii]

Accurately determining Scope 3 emissions across the economy requires similar action from companies and financiers.

[xii] A description of how trade finance can be used to carry sustainability data is included in the CISL publication Banking Beyond Deforestation. To ensure the continued evolution of global trade meets the need to improve sustainability, CISL is also a contributor to TRADEHUB, a multi-stakeholder effort focussed on soft commodities.

Create tools to automate risk assessment

Use cases are too time-consuming to replicate at pace across portfolios. Templates and automation tools are needed that determine relationships between:

1. Nature loss scenarios, created based on likelihood and materiality
2. Geographies, with location specificity (eg country, asset) determined by data availability
3. Financials of companies that experience a direct impact, eg revenues and variable costs of farmers due to pollinator loss
4. Financials of companies in a value chain indirectly impacted, eg soft commodity price spikes impact buyers
5. Impacted company financials and credit and market risk.

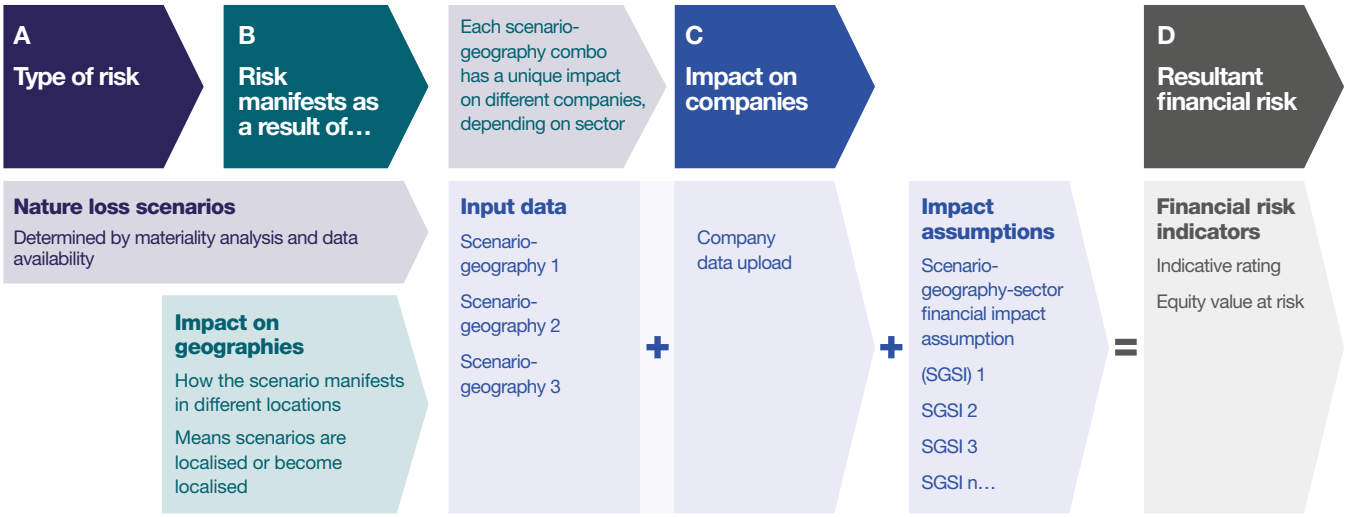
With drivers of nature loss and their impacts varying by geography, numerous place-based scenarios are required to adequately map nature-related risks. To make a start, the most financially material scenario and value chain combinations need to be covered, such as land degradation and its impact along the agriculture value chain.[xiii]

The Paris Agreement Capital Transition Assessment (PACTA) is a useful example of what is possible, driven by climate scenarios and their impact on equity portfolios and loan books. A future tool looking at nature-related risks could be similar, enabling assessment of equity value at risk by uploading company financials, primary geography and position in the value chain.

Even if relationships between nature loss and financial impact are quite generic in the first instance, a tool that provides quantified indications of risk can catalyse internal engagement, kickstarting further investigation.

Include nature in portfolio company engagement

Figure 9: Visual of components for nature-related financial risk assessment tool



[xiii] WWF, Climate & Company, Earthmind and Mundialis are working on the creation of a tool in this area. See https://climateandcompany.org/news/wwf-climate-amp-company-earthmind-and-mundialis-are-joining-forces-to-develop-a-first-of-its-kind-biodiversity-risk-method-for-investors.

Although data are required to begin assessing specific nature-related financial risks, validation with portfolio companies is required. The materiality conclusions arrived at in the use cases demonstrate a strong business case to build nature-related considerations into client engagement. These engagements could look at:

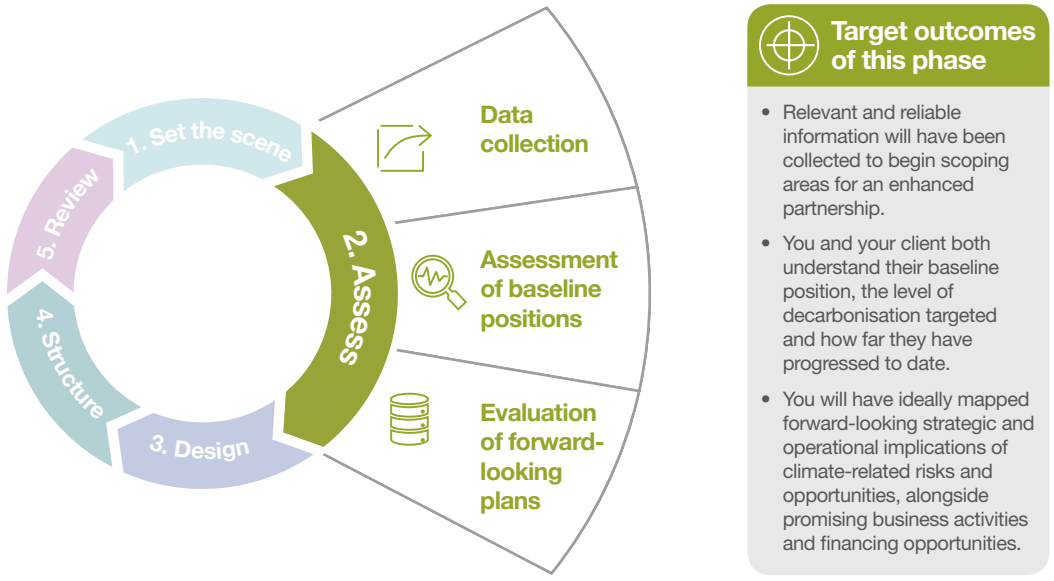
- the baseline current exposure to the risks stemming from nature loss, such as whether a producer is farming degrading land.
- forward-looking ambitions, such as whether soft commodity buyers are developing a strategy to support their suppliers' transition to agricultural techniques that regenerate soil health and increase resilience to extreme weather.

As well as mitigating financial risk, engagement with portfolio companies is an opportunity for financiers to:

- support transition of business models and outcomes that protect and restore nature, such as investment in soil health.
- offer services that hedge anticipated volatility, eg crop prices, and therefore integrate the risk into the financial system through fees charged for these additional services.
- deepen the relationship with the portfolio company.
- reprice existing lending and restructure investment.
- exit companies that do not take action to integrate nature into their strategy, investment decisions and business model.

Building on the climate risk mitigation and transition agenda would, again, be useful. In Let's Discuss Climate, CISL's Essential Guide to Client Engagement, the above process is captured by Phase 2: Assess (see Figure 10).

Figure 10: Assess phase of BEI's Let's Discuss Climate: Essential guide to bank-client engagement (CISL, 2021)



More open-access environmental data

Collecting environmental data can be expensive and time-consuming. Unless the burden is shared or open-access data are provided by governments, coverage of nature-related risks will not be economy-wide and risks will increasingly sit with resource-constrained smaller companies.

Use Case A about land degradation showed that smaller companies in an agriculture value chain:

- are more vulnerable because nature-related risks manifest locally and these companies are less diversified.
- may be forced to sell assets to larger competitors to maintain solvency.
- are likely to be left without affordable finance to prepare for the next shock, if they endure the first.

Meanwhile, some major corporates are taking action by (1) paying for private intelligence, for example about suppliers connected to land degradation, and (2) reducing the number of suppliers by more than 90 per cent to make gathering environmental intelligence about exposure easier.[xiv]

Open-access environmental data can enable smaller companies to be included in nature-related risk assessments by financiers who cover the economy as a whole, ensuring risk integration happens economy-wide and that any transition to nature-positive is inclusive. This open-access information would also be picked up by mainstream financial data providers – for interpretation and aggregation – providing easy access and enabling it to be included in system-wide financial data portals.

Onboard and support motivated analysts

CISL has developed use cases in partnership with pioneering credit, equity and risk analysts. The analysts were central and indispensable to the process because (1) quantifying credit and equity value at risk requires specialist training and experience and (2) undertaking pioneering risk analysis is time-consuming.

The analysts were supported by:

- an experienced guide, in this case, CISL.
- industry experts, to provide input data and scenario information.
- portfolio and relationship managers, to validate assumptions with portfolio companies.

As a direct result of conducting the use cases, participating financial institutions are now allocating additional resources to support the assessment of nature-related financial risks. This outcome demonstrates the business case for other financial institutions to engage, support and motivate analysts to create additional use cases to assess nature-related financial risks.

[xiv] Mars is a prominent example, reducing the number of palm oil suppliers by 94 per cent: https://www.supplychaindive.com/news/mars-cut-suppliers-deforestation-palm-oil-supply-chain/586457/

Call to Action

Now is the time for the financial sector to lead; integrating nature into decision making, managing nature-related risks and catalysing capital reallocation that protects and restores nature.

With valuations at risk of declines approaching 50 per cent and multiple-notch credit downgrades shown by CISL use cases, senior management of financial institutions need to begin dedicating resources to assessing nature-related financial risks. Financial institutions can already begin these assessments, using existing use cases and frameworks as guides.

Climate change and nature loss are intertwined, exacerbating one another. Recognising the risks posed by nature loss has the potential to drive investment in nature, as well as in climate adaptation, which the Intergovernmental Panel on Climate Change (IPCC) warned in February 2022 remains "fragmented, small in scale [and] incremental".[14]

Momentum to finance nature protection and restoration is building, creating opportunities to facilitate and reallocate capital to nature-positive companies. The Taskforce for Nature-related Financial Disclosures (TNFD) is underway and new government commitments will be made to protect and restore nature at the COP15 for Biodiversity.

The integration of nature into financial decision-making can refresh the relationship between people and planet. Identifying and assessing nature-related financial risks are key steps for creating an economy with nature at its heart.

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