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# Rethinking risk: the insurance industry's role in nature protection

Nature and biodiversity risks, while generally not as well understood as climate-related risks, are important and relevant risks for insurers. Due to their perceived complexity, insurers may face nature-related risks that are not yet adequately captured in their current risk assessment frameworks or models. This gap can lead to an underestimation of the actual environmental, social and governance (ESG) risk exposure, reducing an insurer's capacity to effectively manage growing nature-related threats - ultimately resulting in a financial risk to the insurer[1].
Understanding this risk is therefore imperative to support the mobilisation of capital away from activities that are harmful to nature and towards those that restore and protect nature.

Martine Botha, Sustainability Senior Manager at KPMG, sat down with Candice Dott, Director of Global Market Engagement at the Taskforce on Nature-related Financial Disclosures (TNFD), to unpack why insurers should start considering nature-related risks as part of their ESG risk frameworks. This article provides background on the TNFD recommendations and guidance as well as practical insights for insurers on how to begin to understand nature-related risks.

## Can you briefly explain what the Taskforce on Nature-related Financial Disclosures (TNFD) is, and why it was established?

"The TNFD is a global, market-led initiative aimed at helping organisations assess, report and act on their nature-related dependencies, impacts, risks and opportunities. Launched to mirror and expand on the success of the Task Force on Climate-Related Financial Disclosures (TCFD), the TNFD supports decision-making that incorporates the four realms of nature: land, freshwater, ocean and the atmosphere. The TNFD enables companies and financial institutions to better integrate nature-related risks into risk management and strategic planning by building on science-based principles and stakeholder engagement, including with Indigenous Peoples and Local Communities and affected stakeholders."

## Why should insurers based in South Africa be concerned about biodiversity loss and nature-related risks?

"South Africa is one of the world's most biodiverse countries, with ecosystem services essential to sectors like agriculture, tourism, mining and water provision. Nature and biodiversity losses can pose material underwriting and investment risks to insurers through their exposure to sector-specific vulnerabilities. Degrading natural systems can increase the frequency of claims, shift underwriting profiles and compromise financial stability. Examples of this include soil degradation which affects crop yields, and flooding risks amplified by mangrove and wetland destruction. All of these are real risks that insurers are already having to consider.

If we unpack this in greater detail, wetlands provide natural flood protection for residential and commercial properties, as well as agricultural land. They function as buffers by absorbing excess rain and surface water, thereafter releasing this excess rain slowly over time. This process helps moderate water flow, lower peak flood levels and reduce rapid runoff, ultimately decreasing flood-related damage. However, when wetlands are degraded due to activities such as land development, farming expansion or pollution, their capacity to manage and store water is compromised. This can lead to more intense flooding after heavy rainfall, resulting in lower agricultural yields and income, higher property damage and greater insured losses. By understanding these nature-related dependencies, insurers can better evaluate how changes in ecosystems may give rise to physical nature-related risks and associated financial impacts."

[1] Murphy, D. (2025) 'Insuring against extreme heat: navigating risks in a warming world', *World Economic Forum*, 17 January. Available at: https://www.weforum.org/stories/2025/01/insuring-extreme-heat-navigating-risks/ (Accessed: 21 July 2025).

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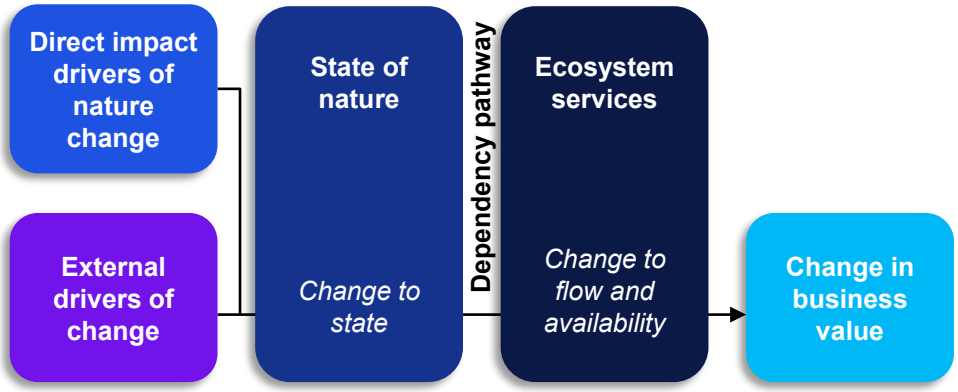
**Figure 1: Dependency pathway diagram**




***Source:*** *Rooted in Risk, UNEP FI*[2]

*Nature-related dependencies refer to the environmental assets and ecosystem services that individuals, households or organisations rely on. To fully understand these dependencies, it is important to consider the dependency pathway. For insurance underwriting portfolios, considering the dependency pathway can be especially useful for understanding how ecosystems and nature-based solutions can contribute to reducing physical hazards from natural perils, thereby potentially reducing damages or losses.*[2]

"Another good example which is pertinent to Johannesburg is the extent and prevalence of heat islands. A heat island is defined as an urban area having a higher average temperature than its rural surroundings owing to the greater absorption, retention and generation of heat by its buildings, pavements and human activities. Due to urban expansion, an increase in heat islands has been observed. Extreme heat is becoming an increasingly significant risk for the insurance sector, particularly affecting property, specialty and life and health lines. It heightens the likelihood of power outages and wildfires and can also harm or disrupt transportation, water and energy systems, ultimately leading to a rise in property and specialty insurance claims."

**Quick fact:** As some of the largest asset owners globally, insurers face significant investment risks because of extreme heat. By 2035, extreme heat is projected to cause USD2.4 trillion in annual productivity losses and USD448 billion in annual fixed asset losses for publicly listed companies. Despite this, insurers continue to spend more money on responding to these risks than preventing them. According to the World Economic Forum, despite every dollar spent on risk reduction yielding USD13 in long-term benefits, 88% of disaster funding remains allocated to post-event response[1].

## Increasing global temperatures and biodiversity loss: a human health crisis

A recent Lancet article[3] argues that as the climate warms and ecosystems falter, we are no longer facing a purely environmental crisis, but a full-scale public health emergency.

The landmark study synthesises decades of scientific data to show how transgressing the nine planetary boundaries[3], ranging from climate and biodiversity to pollution and freshwater, is already inflicting widespread harm on human health and is likely to drive a growing share of global disease in the coming decades[3].

## How does biodiversity risk differ from climate risk in terms of impact and measurement for insurers?

"Rising global temperatures, extreme weather events and disruption to ecosystems have become common occurrences. Yet climate change is not merely an environmental issue. It is a human issue affecting food scarcity, public health, migration patterns and economic stability, amongst others.

Nature plays a central role in mitigating climate change. Forests, oceans and wetlands act as carbon sinks, absorbing vast quantities of carbon dioxide from the atmosphere, slowing the pace of global warming. Yet when we degrade these ecosystems through deforestation, overfishing or pollution, we not only lose the invaluable services that these ecosystems provide, but these affected ecosystems begin to contribute to the acceleration of climate change.

While climate risk is now widely understood and standardised through metrics like the Greenhouse Gas Protocol, biodiversity risk is more localised, complex and difficult to quantify. Nature-related risks are often non-linear and spatially specific and are unique to different countries and biomes. While carbon emissions can be quantified uniformly across borders, biodiversity is context-specific, reflecting the unique ecological characteristics of each country and region.

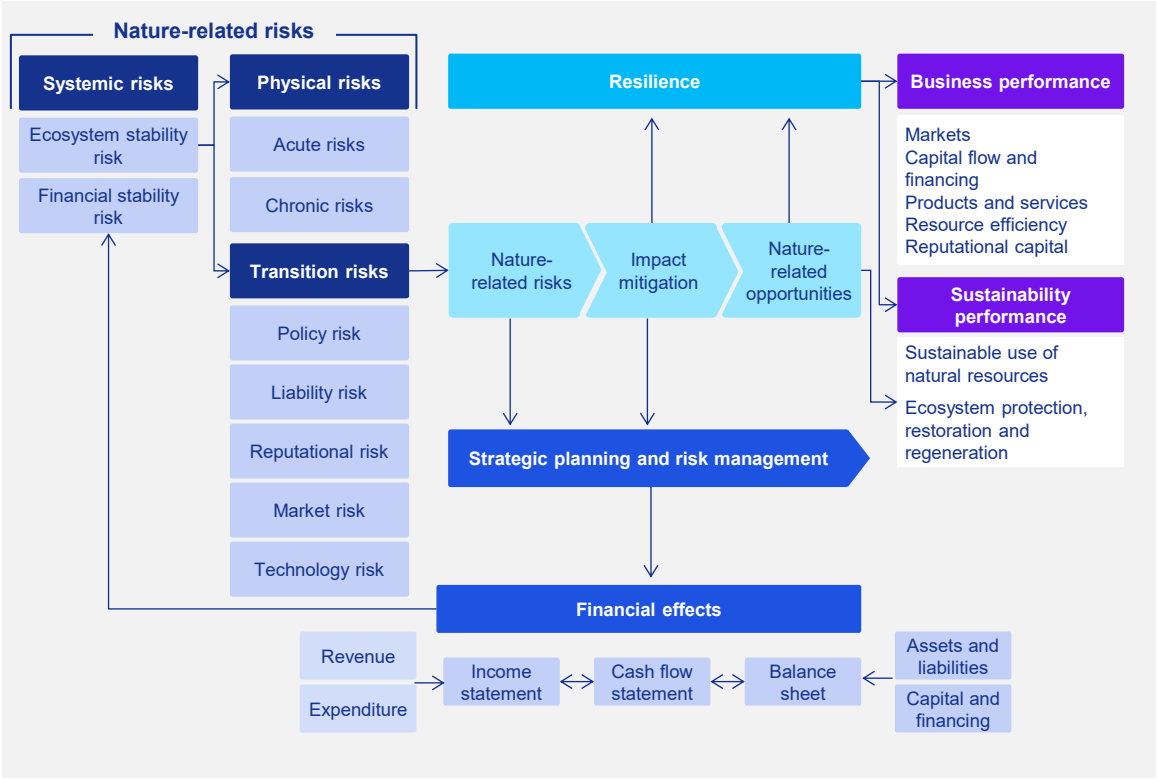
[2] **UNEP FI.** (2024) *Rooted in risk: framing nature-related assessments for insurers*. United Nations Environment Programme Finance Initiative. [online] Available at: https://www.unepfi.org/industries/insurance/rooted-in-risk-framing-nature-related-assessments-for-insurers/ [Accessed 18 Jul. 2025].

[3] **UNEP FI.** (2024) *Rooted in risk: framing nature-related assessments for insurers*. United Nations Environment Programme Finance Initiative. [online] Available at: https://www.unepfi.org/industries/insurance/rooted-in-risk-framing-nature-related-assessments-for-insurers/ [Accessed 18 Jul. 2025].

In order to bridge this gap, the TNFD developed a metrics framework with fourteen core indicators. Five of these indicators relate to the risks to and opportunities for businesses, while nine indicators relate to dependencies and impacts on nature. These indicators are designed for consistency and comparability across sectors and regions.

The indicators also support investor needs and enable third-party assurance, all of which is fundamental in enabling trust and transparency and helping integrate nature into financial decision making."

**Figure 2: Nature-related risks and opportunities and financial effects**




**Source:** TNFD[4]

*This diagram from the TNFD shows how nature-related risks - systemic, physical and transition - can impact an insurer's resilience, strategic and financial outcomes. By identifying these risks and pursuing mitigation, adaptation and nature-positive opportunities, businesses can enhance both sustainability and performance. Ultimately, managing nature-related risks effectively supports long-term business value through improved financial health, risk resilience and environmental stewardship.*

[4] Nature -related risks & opportunities – The TNFD recommendations, Available at: AP3C Introduction to TNFD Recommendations

## How can the TNFD help insurers identify, assess and disclose nature-related risks and opportunities?

"The TNFD introduces the LEAP approach - Locate, Evaluate, Assess and Prepare - as a step-by-step methodology to help organisations understand and manage their interface with nature. This includes identifying priority locations, assessing impacts and dependencies and building mitigation strategies. Insurers do not need perfect data to get started; rather, one can begin with existing environmental data and expand from there. With this understanding, organisations can then take steps to mitigate that risk, identify nature-related opportunities and move towards nature-positive outcomes.

The information collected during the LEAP approach can support reporting efforts, as governments, standard setters and regulators are requiring increased nature-related transparency in the same way we have seen climate risk disclosures evolve. Furthermore, we are seeing institutional investors and asset owners expanding their stewardship guidance to include nature, no longer just limited to climate, because of a growing recognition of nature-related issues such as deforestation, water stress and the collapse of pollinators. All issues that will have direct implications for long-term value creation and systemic resilience.

By starting with the LEAP approach, businesses can begin to integrate nature into strategic decision making. The process is not just about environmental stewardship; it can help to identify areas that may require risk management, operational continuity and regulatory compliance. This is especially pertinent to an insurer, where managing risks - including understanding, preventing, reducing, carrying and sharing risk - is its core business. There are also various opportunities that may present through a LEAP approach, for example identifying the need for new products, processes and services, which can in turn lead to new brand and reputational opportunities. Ultimately, a LEAP approach can help future-proof business models in a world where nature is increasingly material to financial performance."

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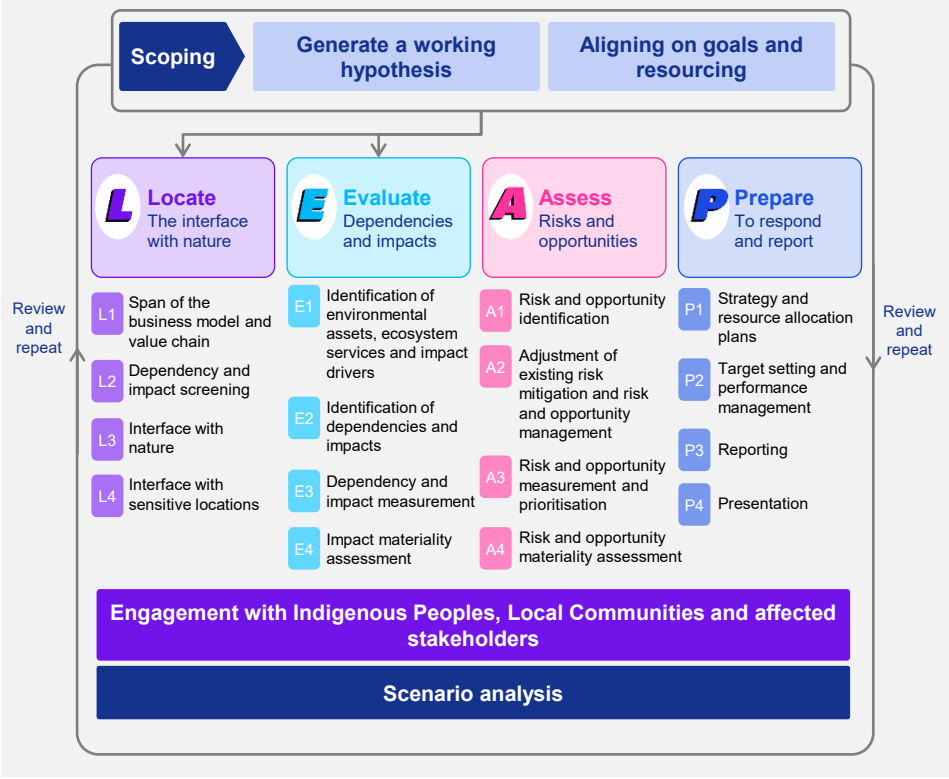
**Figure 3: LEAP approach: an optional approach to help organisations identify and assess nature-related risks and opportunities**




**Source:** Guidance on the identification and assessment of nature-related issues: the LEAP approach – TNFD[5]
LEAP is an integrated approach developed by the TNFD to identify and assess nature-related risks and opportunities. It is designed for use by organisations of all sizes across all sectors and geographies. There are various resources available through the TNFD website for further details on this approach.

## Are there any TNFD adopters or case studies of insurers implementing TNFD-aligned practices?

"Yes, globally, 22 insurers have already adopted the TNFD recommendations, including AXA Climate, which has created detailed use cases around underwriting and portfolio mapping. In Africa, Kenya currently leads in adoption. Notably, Japanese insurers are also setting a strong example, integrating nature considerations into both underwriting and product development."

| Insurer | Initiatives and actions |
|---|---|
| **Allianz Insurance group - Germany** | Allianz conducted a LEAP-aligned assessment across asset classes, including insurance portfolios, to map dependencies, impacts, risks and opportunities on biodiversity. Allianz has also started with implementation plans in respect of a systematic biodiversity strategy, with sector-specific data aggregation and integration into investment decision-making[6]. |
| **AXA and AXA XL Insurance - France** | AXA is on the TNFD Taskforce and is an early TNFD adopter. AXA XL has started mapping nature-related risk heatmaps, geospatial overlays and exploring nature-positive underwriting and products[7]. |
| **MS&AD Insurance Group - Japan** | MS&AD Insurance is on the TNFD Taskforce and is an early TNFD adopter. They also support TNFD adoption via the Japanese consultation group. They provide consulting and tools including the Foundation for Nature and People's Sustainability (FANPS) diagnostic, workshops and a biodiversity risk quantification application. This application assesses short-, medium- and long-term nature risks across operations and value chains using LEAP and provides tailored TNFD-aligned consulting to clients[8]. |

[5] Taskforce on Nature-related Task force on Financial Disclosures (TNFD), 2023. *TNFD in a Box Module 4: The LEAP Approach.* [pdf] Available at: https://tnfd.global/wp-content/uploads/2023/11/TNFD-in-a-Box-Module-4_-The-LEAP-Approach.pdf [Accessed 25 Jul. 2025].

[6] Allianz biodiversity case study – TNFD

[7] AXA, 2025. *Taskforce on Nature-related Financial Disclosures (TNFD).* [online] Available at: https://www.axa.com/en/commitments/tnfd-taskforce-on-nature-related-financial-disclosures [Accessed 25 Jul. 2025].

[8] MS&AD Insurance Group, 2025. *Initiatives for Biodiversity and TNFD.* [online] Available at: https://www.ms-ad-hd.com/en/csr/quality/creature.html [Accessed 25 Jul. 2025].

## What role does data and technology play in enabling insurers to assess and manage nature-related risks effectively?

“Nature-related data is crucial but remains fragmented. The perception in the market that there is a lack of nature-related data is misleading. Pilot testing of the draft TNFD framework revealed that many organisations were surprised by the amount of nature-related data they already had in their organisations. However, such data had typically not been shared across the organisation. Another issue with data is that it is often unstructured, incomplete and does not meet the audit and assurance requirements that business and finance require. Geospatial technologies, satellite imagery, artificial intelligence and supply chain logs are being harnessed to bridge this gap. In addition, the TNFD’s data initiatives include the concept of a nature data public facility (NDPF), helping address key issues like data availability, usability, interoperability, auditability and verification.

Nature and biodiversity data is important for insurers, as it can more accurately paint a picture of the risk landscape. In a recent study done by Allianz, it was found that portfolios most exposed to equities and the agricultural and food services sectors feel the pinch of biodiversity loss most. The study explores how pollination services loss, i.e. the loss of pollinators like birds, bats and insects, could impact crop production and farm yields and therefore the portfolio of an insurer. To counter this, insurers could promote the use of less artificial inputs such as pesticides, improved precision farming techniques and resources and habitat protection for pollinators to thrive (biocontrol and ecological principles)[9]. The key message from this being that these useful insights can be obtained through the effective use of data.”

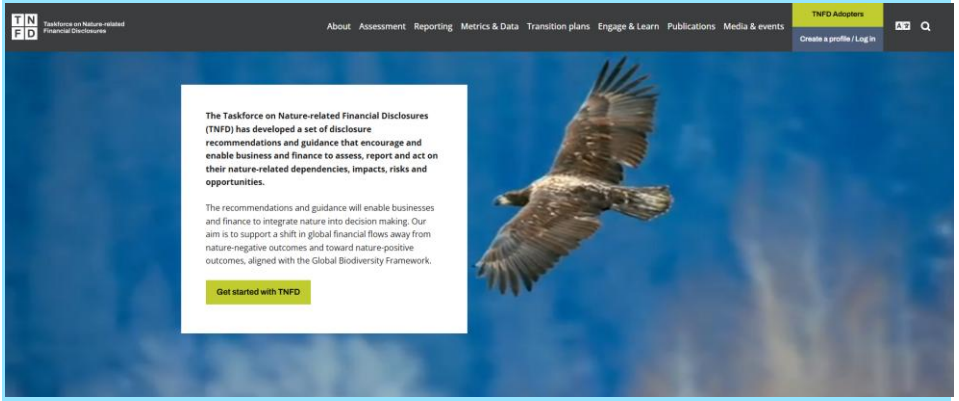
**Practical examples of biodiversity data usage for insurers:**

- A **property insurer** might use **floodplain and wetland location data** to price flood insurance more accurately and identify risks from degraded natural buffers.
- A **life insurer** may evaluate **heat stress zones** and water access to assess long-term mortality trends in certain geographies.
- A **reinsurer** can overlay **species loss or ecosystem service degradation** to evaluate systemic risks in agriculture-heavy portfolios.
- An **underwriter for agribusiness** could assess **soil degradation or pollination service loss** as part of risk profiling.

## What would your recommendations for next steps be for insurers starting out on this journey?

“Begin with awareness and internal capacity-building using the TNFD’s ‘Engage & Learn’ material on the TNFD website. This includes a Learning Lab for individuals and free to use training material and slides on the online Trainer Portal. From there, we recommend that insurers start piloting the LEAP approach on a manageable business segment. There is also much learning to be gained from public case studies and LEAP use cases. Join the TNFD Forum to stay updated. Above all, progress over perfection - getting started is the most important step.”

For more information about how you can start your TNFD journey, visit The Taskforce on Nature-related Financial Disclosures (https://tnfd.global/).




[9] Allianz Trade. (2023). *Biodiversity loss abatement measures: What role for investors and insurers?* Available at: https://www.allianz-trade.com/en_global/news-insights/economic-insights/biodiversity-loss-abatement-measures.html [Accessed 28 Jul. 2025]. [Accessed 28 Jul. 2025].