

# Briefing note

## Biodiversity



Andre Ranchin  
Investment Consultant

What do orangutans, pollination and global pandemics have in common? All three have been drastically affected by biodiversity loss related to human activities. If we don't act soon, countless species and ecosystems - which are the culmination of millions of years of evolution and play an essential role for human society - will be lost forever over the course of a few generations.

What is the biodiversity crisis and its impact? Why should institutional investors care about the biodiversity crisis and what actions can they take? We will address these important questions in this briefing note on biodiversity.

### What is biodiversity?

**Biodiversity** is the variety and variability of life on Earth, measured at the genetic, species and ecosystem levels.



**Genetics:** variety of genetic characteristics involved in the makeup of a species, resulting in distinguishing characteristics expressed by each individual and helping populations adapt to changing environments.



**Species:** variety of living species on Earth, including plants, animals, fungi and microorganisms.



**Ecosystems:** variety of geographic areas where a number of species, as well as weather and landscape, work together to form the conditions for life.

## Why should investors care about biodiversity loss?

Biodiversity is declining faster than at any time in human history. Since 1970, there has been, on average, a 70% decline in the populations of mammals, birds, fish, reptiles and amphibians. We are in the midst of the sixth mass extinction event, the previous one being 65 million years ago which wiped out the dinosaurs from existence.

The current rate of species extinction is estimated to be around 1000x the baseline rate prior to human intervention and this rate is accelerating. Over 25% of remaining global species are threatened with extinction over the near term, an irreversible loss which will also increase the risk of future global pandemics such as COVID-19.

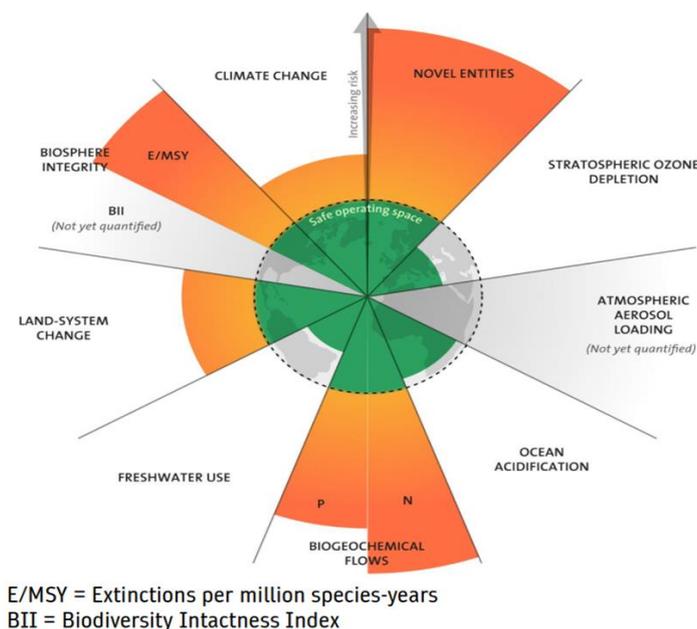
Our economy is a subset of the natural world and vitally depends on nature, with \$44 trillion (over 50%) of global GDP relying on ecosystem services based on natural capital. The WWF has suggested that if biodiversity loss continues its current trajectory, this will result in a loss of over US\$10 trillion in global GDP by 2050. Healthy ecosystems deliver a vast range of crucial services which underpin the global economy including trillion-dollar industries such as agriculture, pharmaceuticals, tourism, fishing and forestry.

## What is the relationship between biodiversity and climate change?

As well as providing food and clean water, natural ecosystems play a key role in regulating the chemistry of our atmosphere. Oceans and forests each capture around a quarter of global greenhouse gas emissions arising from human activities. The destruction of ecosystems and decline in species undermines nature's resilience and its ability to regulate climate. Conversely, climate change is a key threat to both terrestrial and marine biodiversity.

This relationship goes beyond biodiversity and climate change. The planetary boundaries framework highlights nine interlinked human-caused perturbations of Earth systems which risk abrupt and potentially catastrophic environmental change. We are already assessed to be beyond the safe zone for five of the nine planetary boundaries for maintaining Earth's stability, including both biodiversity loss and climate change. This framework, which is illustrated below, demonstrates the interdependence of these key areas and their importance for maintaining safe and stable conditions for human life.

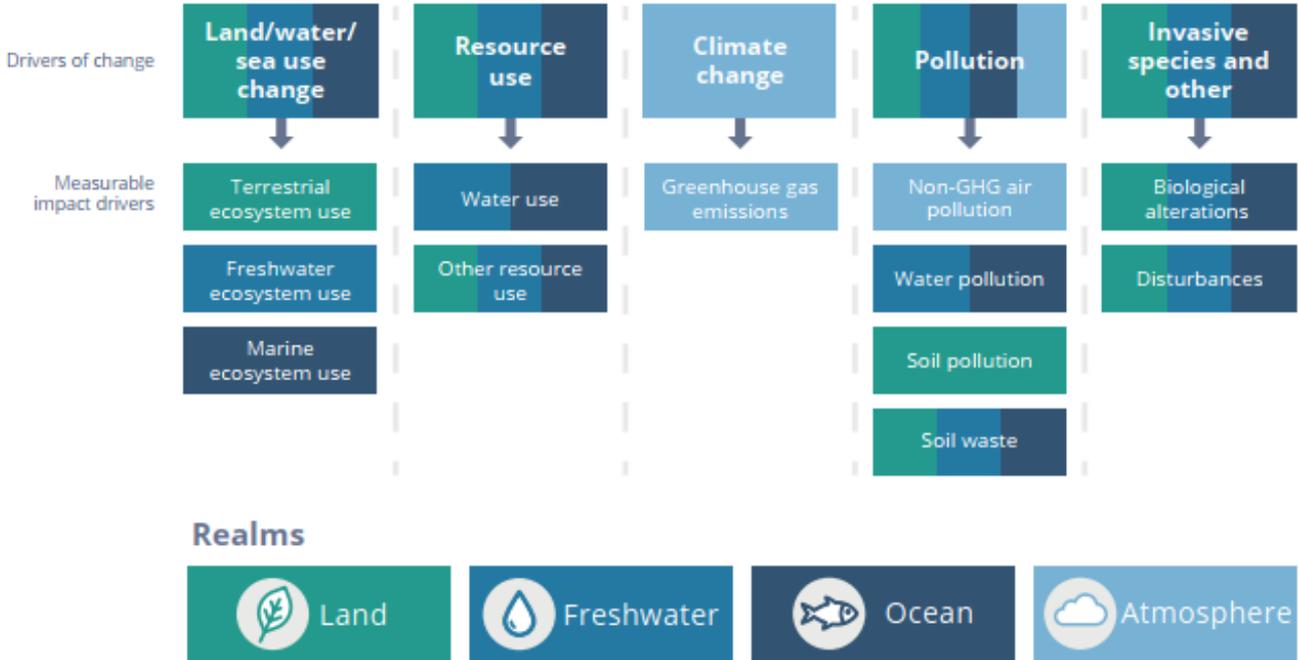
**Figure 1: Planetary Boundaries (Stockholm Resilience Centre)**



### What are the causes of biodiversity loss?

The first step in addressing the biodiversity crisis is to understand the causes of biodiversity loss across the four realms of nature and how to measure the impact of each driver, as set out below. For instance, companies need to understand and measure the impact of pollution on marine biodiversity to inform what actions they should take.

Figure 2: Main drivers of biodiversity loss (TNFD)

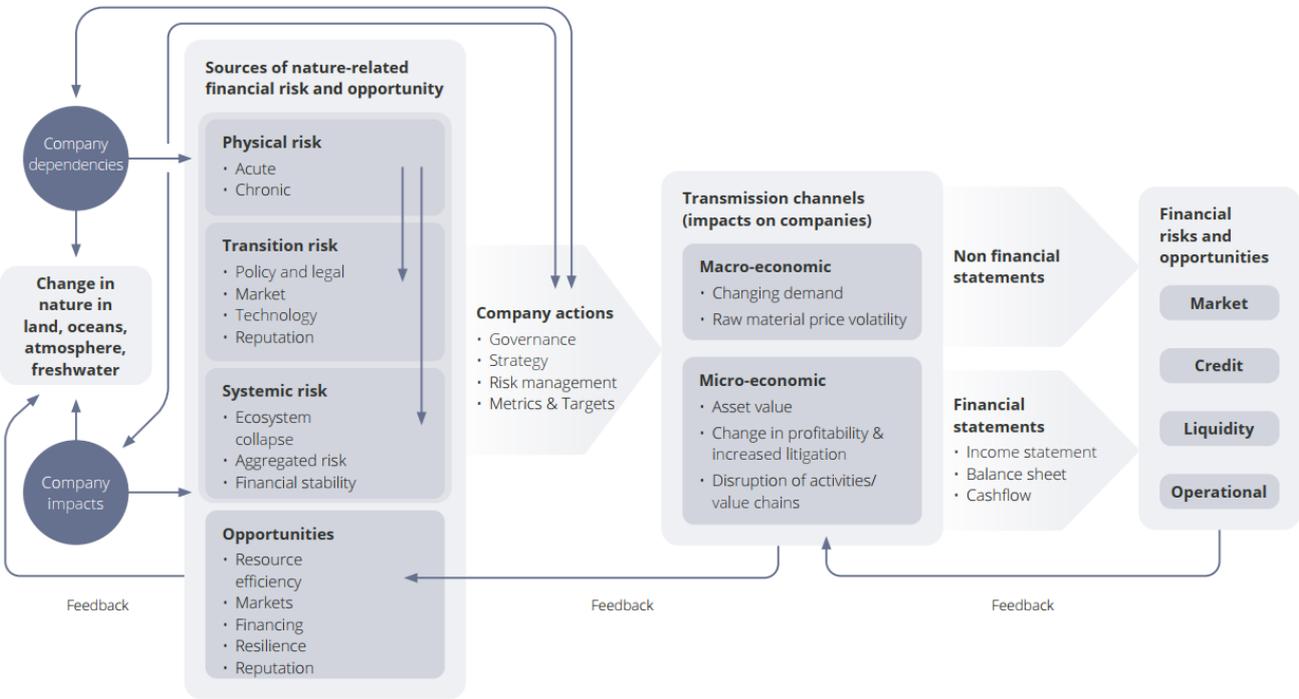


### What is the Taskforce on Nature-related Financial Disclosures?

The Taskforce on Nature-related Financial Disclosures (TNFD) is an international initiative that provides a framework to help organizations address environmental risks and opportunities, aiming to encourage improved reporting of nature-related financial information. The TNFD follows a similar approach to the Taskforce on Climate-related Financial Disclosures framework with key recommendations across four areas: governance, strategy, risk management and nature-related metrics.

The approach suggested by the TNFD is to identify where companies and institutions interact with nature then to evaluate their dependencies and impacts on natural capital. This allows organisations and investors to assess nature-related risks and opportunities, as illustrated in the figure below.

**Figure 3: Nature-related financial risks and opportunities (TNFD)**



## What actions can investors take to address biodiversity issues?

Given the severity and urgency of the biodiversity crisis, we recommend that investors take action to understand and address the impact of their asset portfolios on nature and biodiversity. We suggest the following steps:

- **Engagement:** focusing discussions with investment managers and underlying companies on biodiversity issues can raise awareness of concerns, develop an understanding of the steps they are taking to address the crisis and create accountability.
- **Risk management and monitoring:** understanding nature dependencies and impacts is a prerequisite for managing biodiversity-related risks within an asset portfolio. Although there is no direct analogue to carbon emissions, biodiversity metrics can be used to measure and monitor the “footprint” of investments. Better information can also inform and improve engagement activity.
- **Nature-related opportunities:** the transition towards a nature-positive economy will provide financial opportunities through activities that reduce the negative impacts on nature or contribute to its restoration.

Look out for our mini-series of articles on biodiversity and investment which will share further insights on how institutional investors can address biodiversity-related issues. These will cover deforestation, terrestrial and marine biodiversity and the COP15 biodiversity conference.

### References

TNFD framework (2022) v0.2

IUCN (2022) The IUCN Red List of Threatened Species.

World Wildlife Fund (2020) Living Planet Report

Gibb et al. (2020) Zoonotic host diversity increases in human-dominated ecosystems

IPBES (2019) Global assessment report on biodiversity and ecosystem services

Steffen et al.(2015) Planetary Boundaries: Guiding human development on a changing planet

United Nations (1992) Convention on Biological Divers