



# Biodiversity

— Next Frontier in  
Sustainable Investing?

# Biodiversity

## Next Frontier in Sustainable Investing?

For those interested in our planet and its survival, reasons for concern are plenty. After carbon footprint and climate change, the new topic is 'biodiversity', or more precisely the disasters caused by its degradation.

We offer a few keys to understand the ins and outs of this challenge.

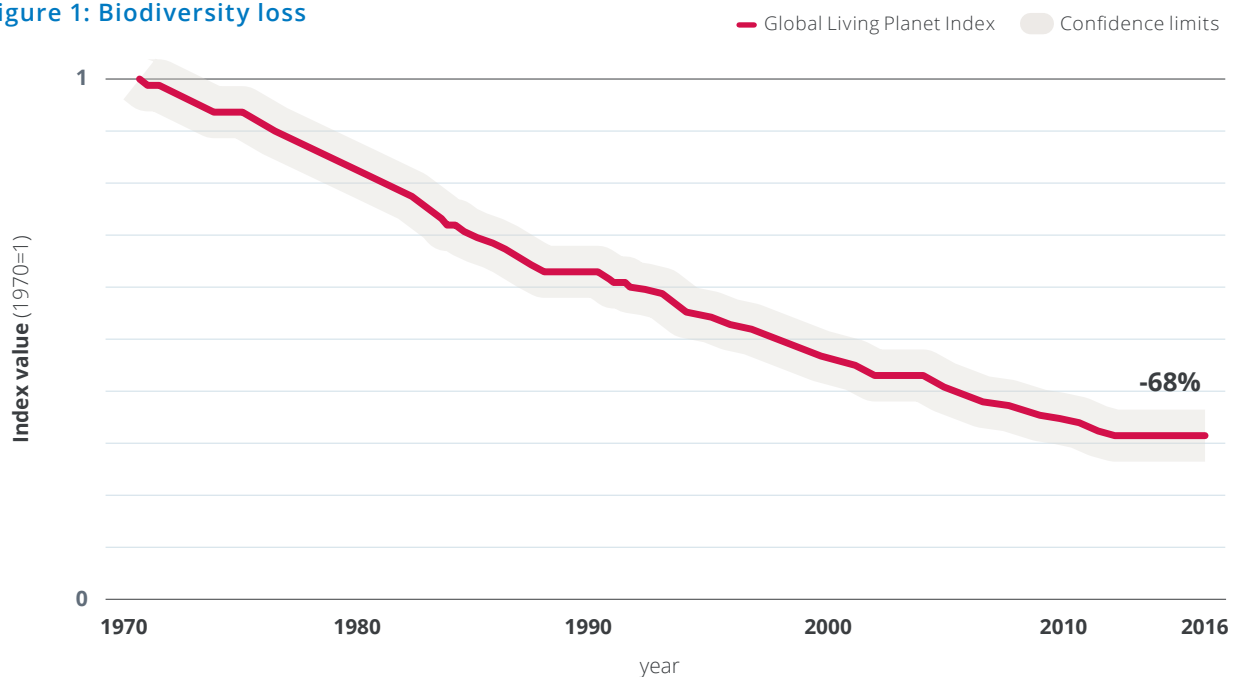
- Where do we stand in practice?
- What are the main drivers of biodiversity loss?
- How can we measure biodiversity loss?
- What are the risks and opportunities?

**Our planet's biodiversity** – the variety of species of animals and plants – **is collapsing**. It is falling at the speed from tens to hundreds of times higher than it did, on average, over the past 10 million years. It is also accelerating (see Figure 1). Our flora and fauna are the engines of every ecosystem providing our civilization with clean water, the air rich in oxygen and nutritious food.

**On July 28<sup>th</sup>** (Earth Overshoot Day), humankind consumed **(ecological footprint) all the resources that Earth can regenerate in a year (biocapacity)**.

According to the World Economic Forum's 2022 Global Risks Report, **biodiversity loss is one of the top three risks in terms of likelihood and impact in the next 10 years**.

Figure 1: Biodiversity loss



Source: World Wildlife Fund (WWF) and Zoological Society of London (ZSL), 2020.

# Climate change

— is just a start

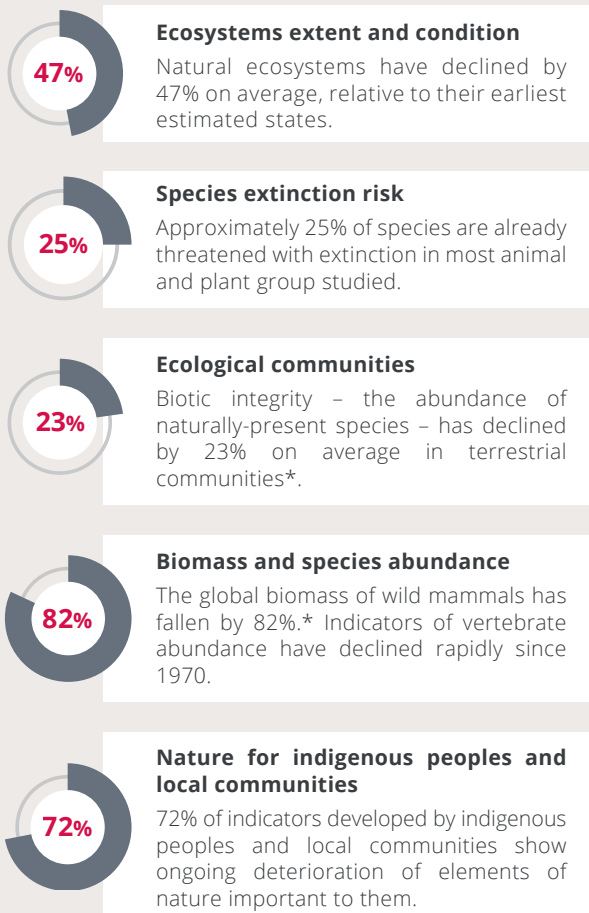
At last, the industry is becoming fluent in climate change – and has a framework to respond to it, guiding the flow of trillions of dollars of capital. There is no doubt that stopping climate change is today's main priority. Achieving carbon neutrality will give us the best chance of preserving living conditions for our children, and for other creatures living on our planet.

So while to save biodiversity without properly addressing climate change will be impossible, it

won't be enough. Nurturing biodiversity back to health will require a lot more – a new and effective framework to address other key drivers of its destruction, including pollution, deforestation, and overexploitation of wildlife on land and in sea.

The scale of the challenge is grave – direct consequences of **human activity have in fact displaced disease, natural disasters, hunger and drought as the biggest cause of death of species.**

## Examples of declines in nature

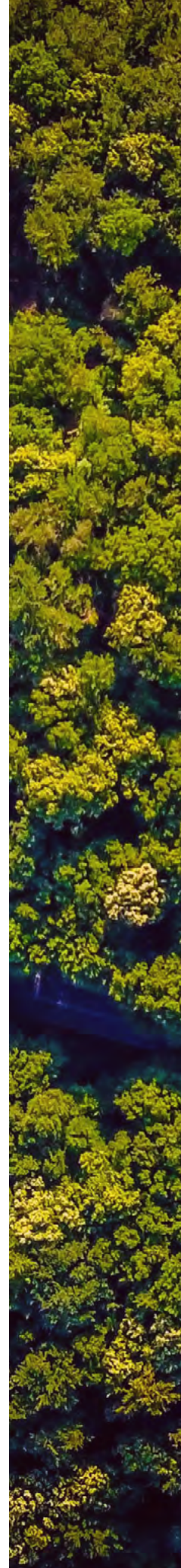


\*since prehistory

## Drivers of Biodiversity Loss

- **Land/sea use change** – this is the biggest cause of biodiversity loss. It includes land conversion, for agriculture and building projects, which leads to degradation of soil, deforestation, and detrimental changes in ecosystems, most of them irreversible.
- **Direct exploitation** – another huge driver, referring to the over-exploitation of animal and plant resources for human consumption. Most of it is used for food production and timber.
- **Climate change** – this significant factor is linked directly to biodiversity and has ability to inflict irreversible changes to ecosystems or destroy them completely.
- **Pollution** – from a variety of sources, industrial, transportation and consumer-led, that affects contaminates air, water and soil.
- **Invasive species and disease** – this factor is growing in importance. Invasive species can damage ecosystems by altering the food chains and introduce new diseases posing immediate risk to the animal stock used for food production. In some cases, invasive animals can pass their infection on to people.

Source: IPBES, Candriam, July 2022.





## Climate Change and Biodiversity Loss: Example

Some 2.5 million square miles of permafrost — 40% of the world's total — could disappear by the end of the century, according to recent research. This will release large volumes of greenhouse gases (GHGs), including methane, carbon dioxide, nitrous oxide, as well as pathogens, that were locked inside for ages. This process is already triggering landslides and slumping at alarming rates, resulting in stream flows changing, lakes suddenly draining, seashores collapsing, and water chemistry being altered in ways that could be deleterious to both humans and wildlife. All across the warming Arctic, shrubs are expanding into tundra where grasses, sedges, and lichens once prevailed. Not only are the taller shrubs shading out the smaller plants below, they are also changing the hydrology of the ecosystem. The snow in tundra areas dominated by shrubs such as dwarf birch tends to melt a week earlier than it does in areas where there are no shrubs. This results in more permafrost thawing, accelerating the process of global warming.

# The cost

## — of doing nothing

About half of the global GDP (about USD44 trillion of its value) is highly dependent on nature. Together, the three largest sectors that are highly dependent on nature generate close to USD8 trillion of gross value added (GVA): construction (USD4 trillion); agriculture (USD2.5 trillion); and food and beverages (USD1.4 trillion). This is roughly twice the size of the German economy.

According to a study published by WWF in 2020, **the decline of natural assets will cost the world at least £368 billion a year - adding up to almost £8 trillion by 2050** – roughly equivalent to the combined economies of the UK, France, India and Brazil.

Given that at that at the current rate of consumption we take from ecosystems about 1.6 times what they can re-generate in a year, it will not be long until the human decimation of resources will start causing whole industries to collapse.

Some tipping points for ecosystems have already been reached, such as the availability of uncontaminated freshwater. Once a tipping point is reached, **a large ecosystem is expected to gradually collapse within 50 years.**

# Quantifying the task:

## — which indicator?

To have real impact we need a focused approach, which can be used consistently across sectors and geographies, by companies and investors alike. A big question – still unanswered fully – is to know **how to measure companies' impact and dependency on nature.**

In the case of climate change, it is the volume of carbon emissions which was identified as « the » major factor on which we can have an impact. **In the case of biodiversity,** the matter is complex. Biodiversity loss is driven by a multitude of individual factors, and their importance and composition will vary depending, for example, on the type of company, its sector and geographic location. It is unlikely that science will provide one « magic » crucial factor that can make all the difference.

In any case, the analysis framework will need to account for the **double materiality** concept, this means analyze both the financial impacts of biodiversity loss on companies – in terms of performance and development, as well as the impacts that companies themselves have on biodiversity (environmental and social impact). Only this complete analysis can enable to understand and measure risks and opportunities.

The lack of an appropriate and easily measurable indicator for biodiversity (like carbon emissions for climate change) is certainly the main obstacle to taking into account biodiversity in economic decisions and investment choices.



**« Economics is a discipline  
that shapes decisions of  
the utmost consequence...  
The Dasgupta Review at last  
puts biodiversity at its core »**

Sir David Attenborough



# Two key reports

---

## The Stern Review on Climate

This 700-page report published by the British government in 2006 and led by economist Nicholas Stern was the first to quantify the costs of addressing **climate change** and present an economic perspective on different scenarios. It found that achieving a cut to carbon emissions to the range of 450-550 parts per million would cost 1% of global GDP every year but **ignoring climate change could cause economic damage on the order of up to 20 percent of the GDP.**

## Dasgupta Review on Biodiversity

In 2021, the British government followed the Stern Review with a landmark **economic impact study into biodiversity** – the Dasgupta Review, led by Professor Sir Partha Dasgupta. It concluded that at the heart of the problem lies deep-rooted, widespread institutional failure. It stated that **nature's worth to society is not reflected in market prices** because much of it is open to all at no monetary charge. These **pricing distortions have led us to invest relatively more in other assets**, such as produced capital, and underinvest in our natural assets. In fact, the report stressed that governments invest more in the destruction of natural resources than in their protection, with **government subsidies that damage nature amounting globally at around USD 4 trillion to USD 6 trillion a year.**

# Three types of risk

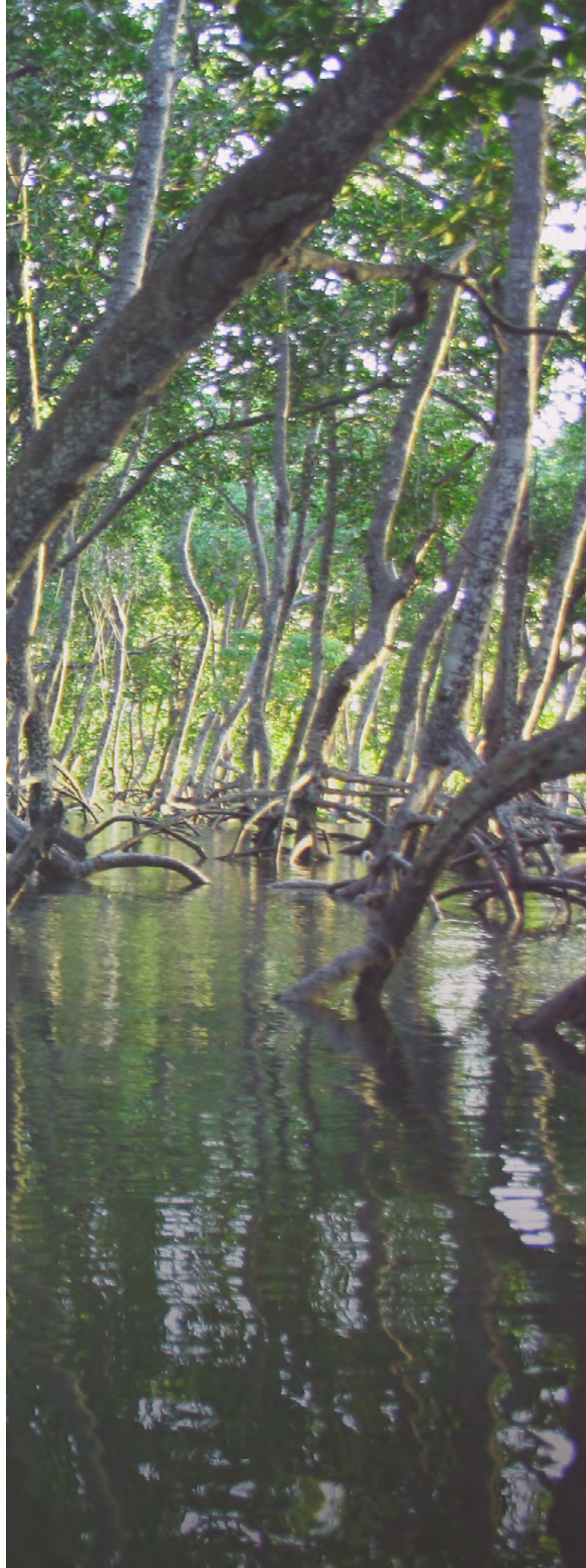
## — for corporates

There are three types of potential threats facing a company, regardless of its sector and activity: physical, transition and systemic:

■ **Physical risks** refer to physical changes to the planet from the loss of nature, such as the one million species that are currently at risk of extinction. For example, if honeybee populations are reduced or eliminated, that will put at risk over USD50 bn worth of crops in the United States as without pollination seeds will not grow. That is an example of a chronic physical risk, while an example of acute physical risk are invasions of locusts, which do not tend to happen every year.

■ **Transition risks** arise from costs associated with the inevitable regulatory or market adjustment towards a nature-positive economy. These measures designed to stall the destruction of our environment can negatively impact companies.

■ **Systemic risks** relate to a deterioration of one ecosystem can trigger significant problems for human civilization in many different areas. For example, poisoned, contaminated soil will not yield nearly as much as before, which in turn can lead to famine.





# Opportunities

## — and Investment Strategies

Leading on biodiversity may offer several commercial advantages for corporates:

- Open profitable new markets by pioneering valuable new products, services and evolving their business models.
- Improvement in their value proposition and brand— by being seen as doing the right thing for the planet.
- Better access to capital and potential operational synergies, including through reductions in raw material and energy costs..

These types of corporate transformation will, clearly, require funding – but how much is required and **where will the money come from?**

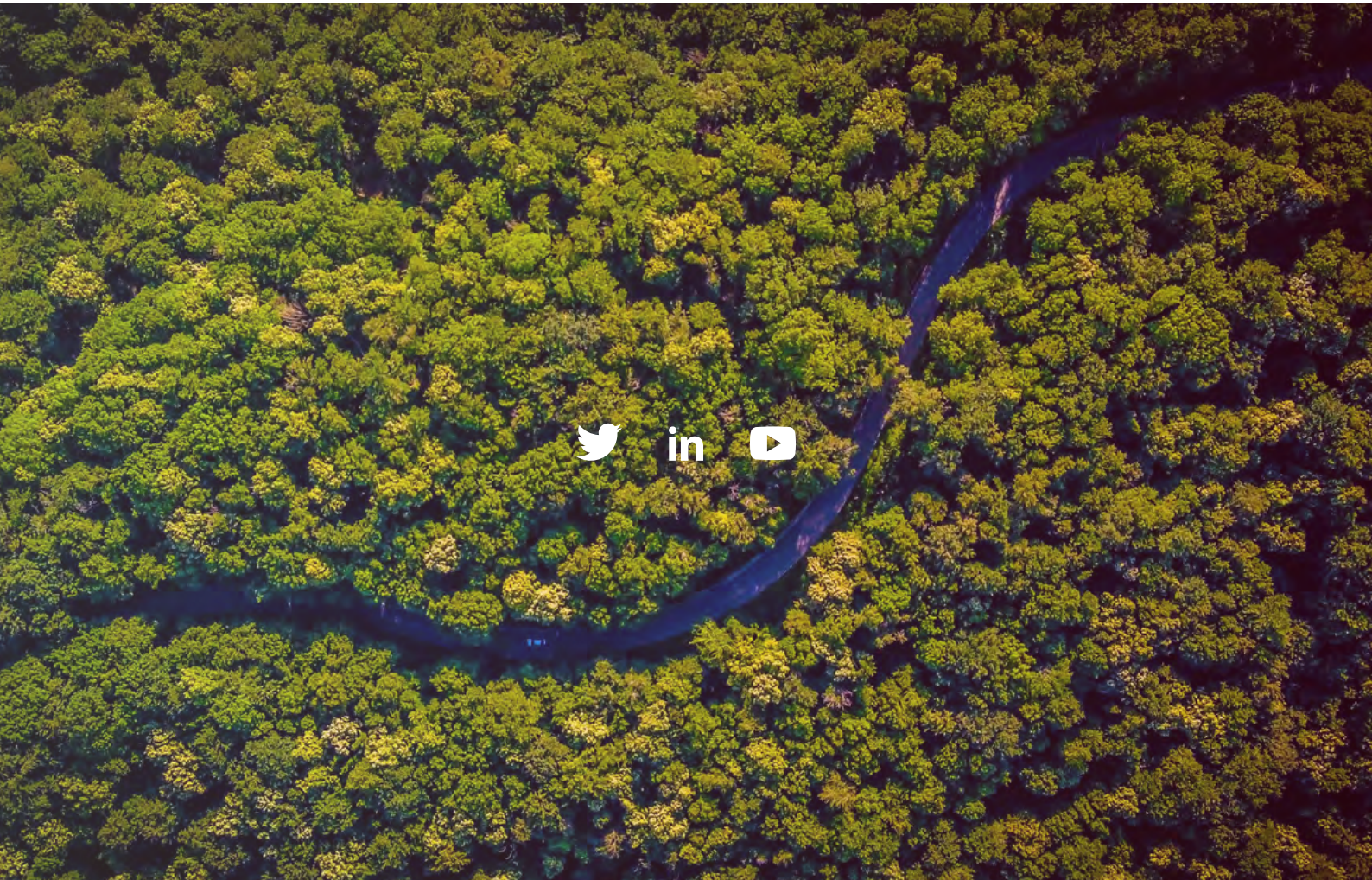
The International Union for Conservation of Nature (IUCN), which uniquely composed of both government and civil society organisations, called on governments to guarantee the additional investment in nature every year for the new biodiversity framework to succeed, and stressed that government stimulus programmes must do no additional harm to nature, and should direct at least 10% of the overall recovery investment to protecting and restoring nature.

On their side, financial institutions can help by expanding investment opportunities, for example, green bonds, low-interest green loans, impact bonds, and other green financial products.

## Next stop :

## — biodiversity !

The main ambition of the UN Biodiversity Conference, to be held in December 2022, is to replicate the Paris Agreement on climate for biodiversity. It will include onboarding a variety of stakeholders in the private sector and the financial industry. It is expected that the new Agreement will feature a formal article defining the role of financial institutions in delivering its key objective: **halting and reversing biodiversity loss by 2030**. Investors will be central to this, as human civilization, for its own sake, returns some of what it has taken from the blue planet.



**This document is provided for information and educational purposes only and may contain Candriam's opinion and proprietary information.** The opinions, analysis and views expressed in this document are provided for information purposes only, it does not constitute an offer to buy or sell financial instruments, nor does it represent an investment recommendation or confirm any kind of transaction. Although Candriam selects carefully the data and sources within this document, errors or omissions cannot be excluded a priori. Candriam cannot be held liable for any direct or indirect losses as a result of the use of this document. The intellectual property rights of Candriam must be respected at all times, contents of this document may not be reproduced without prior written approval.

The present document does not constitute investment research as defined by Article 36, paragraph 1 of the Commission delegated regulation (EU) 2017/565. Candriam stresses that this information has not been prepared in compliance with the legal provisions promoting independent investment research, and that it is not subject to any restriction prohibiting the execution of transactions prior to the dissemination of investment research.

**CANDRIAM. INVESTING FOR TOMORROW.**  
[www.candriam.be](http://www.candriam.be)