

# Investing in Natural Capital: Challenges and Opportunities

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**Marketing communication** 



## About the authors.

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Maïa Ferrand has been co-leading the external multi-management team at Candriam since 2007.

Maïa's career started on the sell side where she spent 15 years trading derivatives and more specifically FX options, in Paris, London and New York. After time spent at Crédit Commercial de France and Crédit Agricole, she joined Lehman Brothers as a Managing Director in 1995, and two years later Crédit Lyonnais in New York, as the Global Head of currency options.

In 2001, Maïa moved to the buy-side by joining Candriam, where she became co-Head of External Multi-management in 2007. The team established a globally recognized franchise in the selection of Hedge Funds and the management of fund of funds, their flagship strategy has a track record which dates back to 2004.

In 2019, the team launched Candriam's first Impact Fund of Private Equity strategies, and since then has been part of a growing ecosystem in the Impact market.

Maïa holds a master's degree in econometrics from the University of Paris Panthéon-Assas and a degree in European fine arts from Christie's Education in the United Kingdom.

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# Humanity's greatest asset.

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Natural capital, particularly energy, is the true foundation of our monetary systems.

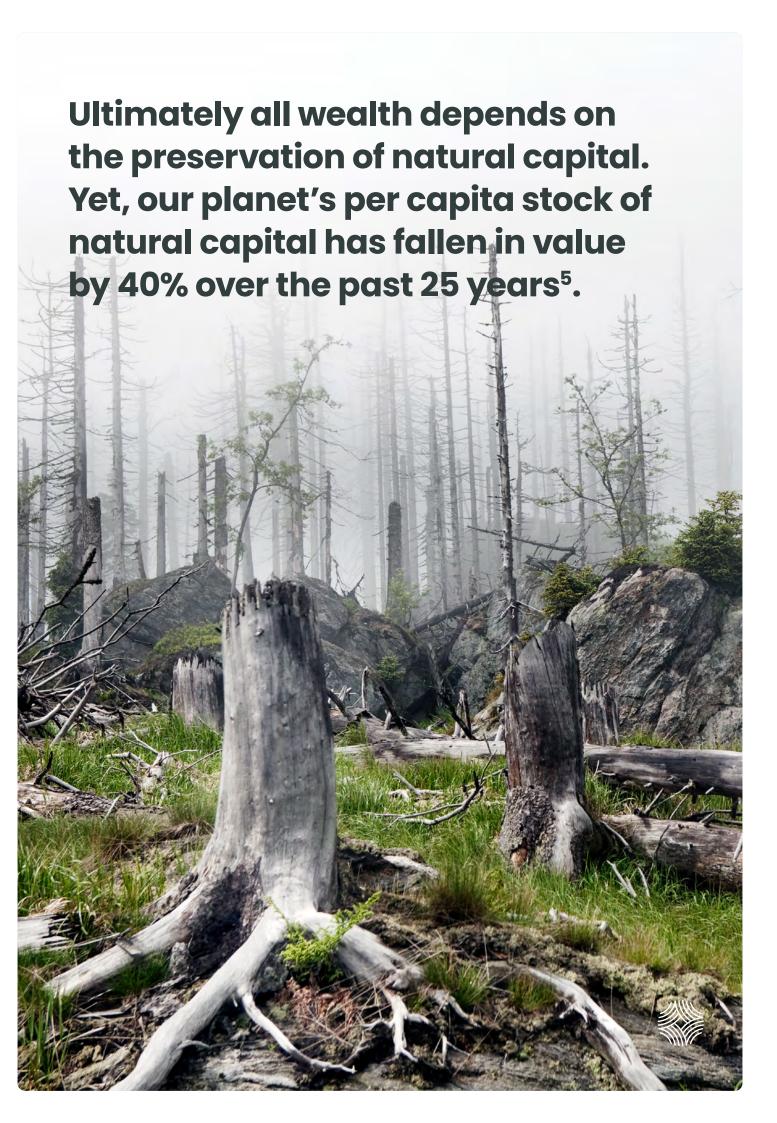
Defined as the "stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people" by the Natural Capital Coalition<sup>1</sup>, natural capital is at the source of everything that surrounds us.

The idea of a stock of natural resources implies that nature is an asset, which generates profits at all stages of the value chain through ecosystemic services.

Given its critical importance for human well-being and the general survival of the human race on Planet Earth, natural capital is definitively humanity's greatest asset.

However, at current consumption levels and without the invention and deployment of ground-breaking technologies, a large part of the resources essential to our lives today will eventually disappear altogether: half of the Australian Great Barrier Reef's coral has already died<sup>2</sup>, over 150 animal, plant and insect species become extinct daily<sup>3</sup> and a global lithium shortage could emerge as early as 2025<sup>4</sup>.

The direction we are heading in is clearly unsustainable in the long run as humanity urgently needs a change of route.

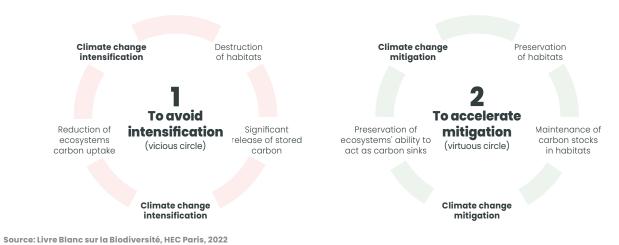


# Decarbonisation alone is not sufficient.

In recent years, a large majority of the push towards sustainability has taken the form of decarbonisation. As a result, only 2% of the \$1tn of international climate finance<sup>6</sup> flows go towards biodiversity and ecosystems<sup>7</sup>. These \$20bn are clearly insufficient given the estimated \$266 billion financing gap in nature-based solutions that needs to be bridged to meet climate, nature and land-neutrality targets by 2030<sup>8</sup>. While climate finance is equally distributed between public funds and private capital, 86% of the funds allocated to nature-based solutions are sourced from the public sector, with the remaining 14% originating from private capital<sup>9</sup>.

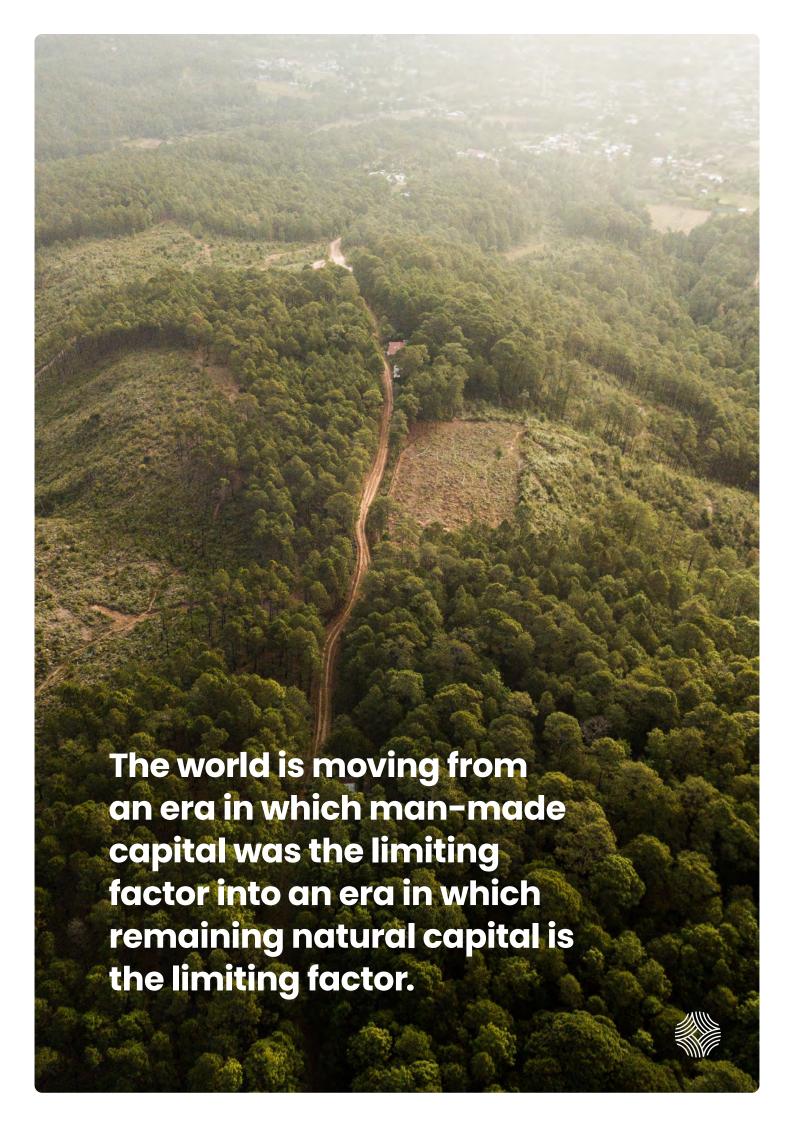
First of all, it is key to note that the natural capital challenge runs hand-in-hand with the climate one. Through the transformation of meteorological conditions or the increase in natural disasters, global warming accelerates natural capital depletion. In Canada, the increased number of wildfires across the country, profoundly influenced by climate change<sup>10</sup>, reached its culmination point earlier this year. As of July 2023, more than 10 million hectares of land have burned throughout the year, shattering all-time historical records11. The Copernicus Atmosphere Monitoring Service (CAMS) reported that 160 Mt of carbon emissions have been released by the 2023 wildfires<sup>12</sup>, close to 30% of the country's total yearly emissions<sup>13</sup>. This example exposes a threatening vicious circle (see Figure 1): global warming leads to the destruction of carbon sinks, which releases even more CO2 into the atmosphere, in turn, increasing global warming.

Figure 1:
Cyclical change mitigation needs natural capital



The cyclical relationship between natural capital and climate demonstrates that saving our planet goes beyond carbon and should consider all planet boundaries. Key decision makers such as governments,

corporates and financial institutions must have a holistic vision of environmental challenges, including social consequences, in order to develop sustainable and resilient economic models.



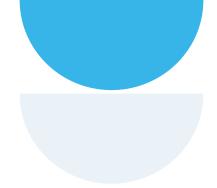
# Natural Capital is at the base of our economy.

Not only is natural capital intrinsically linked to climate stability, but it is also at the heart of our economic models. Every material used to create the objects and structures that surround us originally existed in a state of nature, as natural capital. Originally, your phone is a highly complex combination of transformed aluminium, carbon, oxygen, iron, silicon... and many other components. The raw materials of an iPhone 14 Pro Max cost only 30% of its retail price to Apple 14, as a large part of the associated value comes from assembly, distribution and marketing. At each stage of the supply chain, what was originally natural capital is continuously being transformed to generate added value and, in turn, monetary profit.

In this sense, the total production of a country, or GDP, is a direct function of its level of natural capital multiplied by its capacity to transform this natural capital into valuable goods and services. For instance, in Brazil, the share of Agriculture in the GDP grew by 64% between 2019 and 2021<sup>15</sup>. During the same period, the deforestation rate was close to 10,000 km²/year, 150% higher than the 15-year historical average (4000 km²/year)<sup>16</sup>. In Canada, natural resources are a cornerstone of the local economy, accounting for 17.1% of nominal GDP and providing 1.6 million jobs<sup>17</sup>. The tragedy of the small

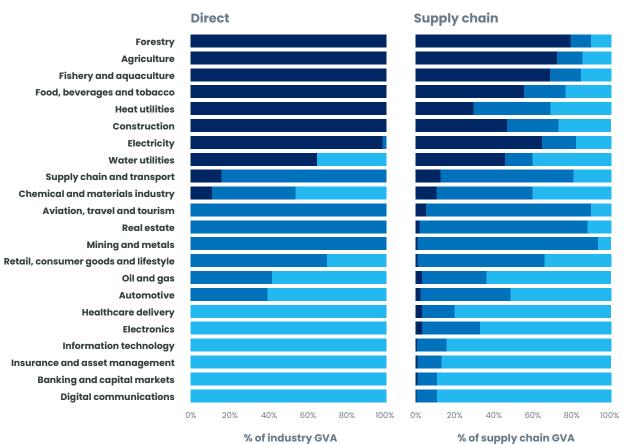
Pacific island-state of Nauru perfectly illustrates how dependent an economy can be on its level of natural capital. Thanks to its concentrated phosphorite reserves, the microstate once had the second highest GDP per capita in the world. However, the rapid extraction and depletion of the phosphate rock, considered as the lifeblood of Nauru's economy, caused severe environmental destruction and economic turmoil, plunging the nation into economic and social despair<sup>18</sup>.

On a global scale, the depletion of natural capital could also have devastating consequences for a large part of the economy. In its Global Futures report, the WWF estimated that in a 'Business as Usual' scenario (where no major policies are put in place to preserve natural capital), changes in ecosystem services would cause the global GDP to drop by \$10 trillion by 2050, a -0.67% annual change<sup>19</sup>. This drop would also be unevenly distributed: given their economy's high dependence on natural resources, some low and middle-income countries could bear a cost of nature depletion that represents up to 2.1% of their annual GDP. Therefore, preserving natural capital is essential for both the climate and the economy in the long run.



**Figure 2:**Share of gross value added that is dependent on Nature in 22 global industries





Source: PwC, 2020

Major industries that compose our economy are partially or fully dependent on natural capital to operate effectively and remain viable in the long run

# Double Materiality: Corporations and Investors have an impact and depend on Natural Capital at the same time

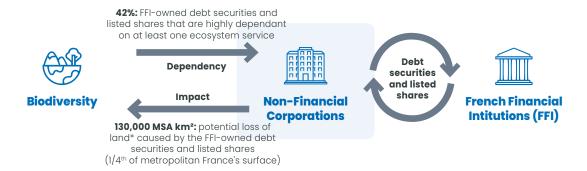
Individual economic operators such as corporations and investors have a twofold relationship with natural capital: their activities often have a negative impact on the very biodiversity and ecosystems critical to the running of their operations. For example, if a brewery pumps water from a well for its beer production, it is not only negatively impacting the local environment by depleting freshwater resources but also diminishing its own future production capacity.



Source: Candriam

Known as "double materiality," the relationship described above highlights that natural capital preservation must be looked at from both an impact and risk perspective. Taking a broader perspective, the Banque de France analysed the substantial double-materiality between biodiversity and financial institutions. By trading debt securities and listed shares with non-financial corporations, financial institutions are both having an impact and depending on biodiversity: while 42% of investments owned by French financial institutions are highly dependent on at least one ecosystem service, these same securities and shares could potentially be responsible for 130,000 MSA.km2 (Mean Species Abundance) of lost land, equivalent to 24% of the area of metropolitan France<sup>20</sup>.

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\*A loss of x MSA.km² is equivalent to the conversion of x km² of undisturbed ecosystem (with an MSA of 100%) into a totally artificialized area (MSA of 0%)

Source: Banque de France

### Risk integration: How investors can embrace double materiality

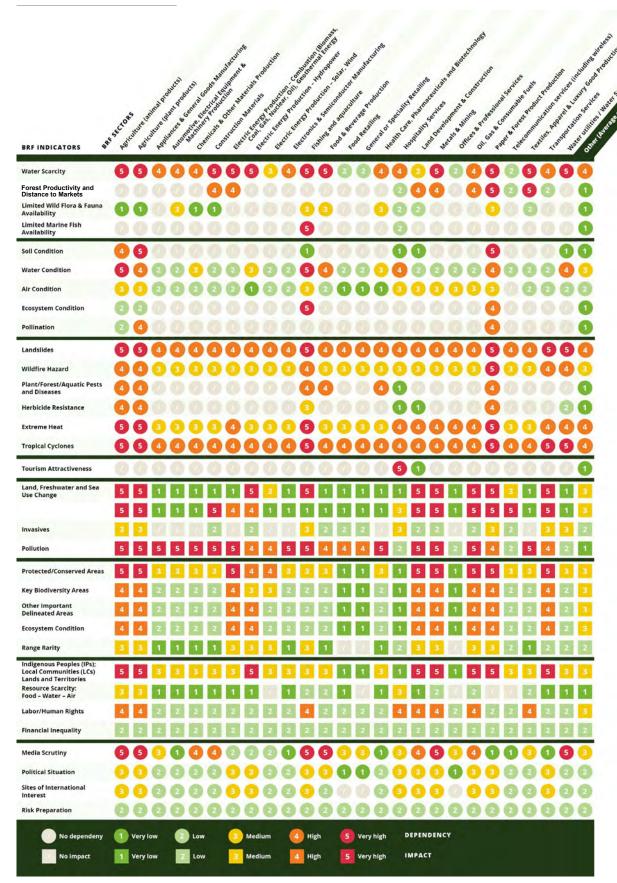
Currently, most methodologies that aim to integrate natural capital focus solely either on impact or risk alone, not considering the links and interaction between them. However, the latter is critical to combat natural capital depletion which must be visualised as a system rather than in individual silos. The WWF Risk Filter weightings table implements this system-thinking mentality, assessing both impacts and dependencies in their measure of biodiversity and water risk of various industry sectors<sup>21</sup>.

The table on the following page is an overview of the detailed and public tool that encourages corporations to address major natural capital challenges and enhance business resilience. On the investment side, access to transparent and accurate information is vital for investors to make well-informed decisions regarding their capital allocation, which can reduce risk and open new

horizons regarding financial return and impact maximisation. Enhancing corporate disclosure, through engagement and regulatory action, is thus paramount to better integrating natural capital in investments.

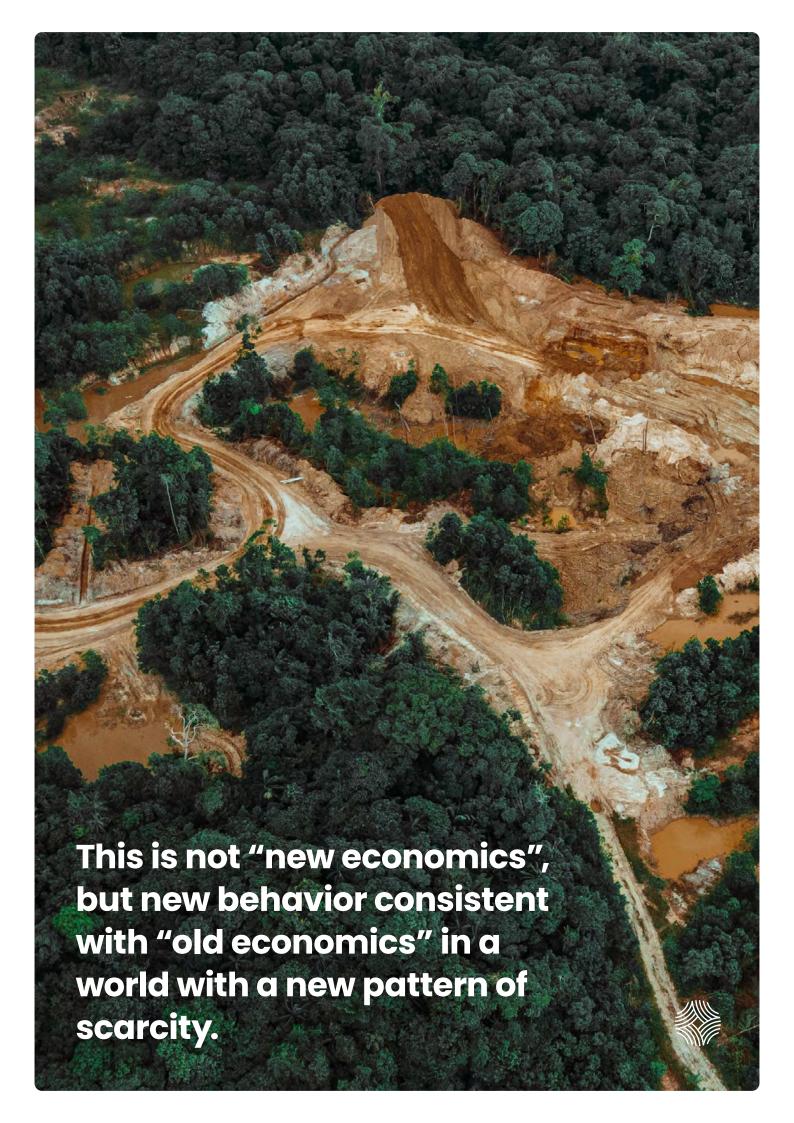
By analysing Figure 3, we can identify both individual levels of impact and dependency on precise industry sectors as well as general trends. Most sectors are dependent on the level of water scarcity and the risk of natural disasters such as landslides or tropical cyclones. The majority of these industries also have a direct negative impact on protected areas and pollution levels. On the industry side, the agriculture, fishing, and paper sectors the most dependent on nature with strong impacts and dependencies on all nature-related topics. While our food systems have driven 75% of all deforestation to date<sup>22</sup>, 35% of our global crop production relies on pollinators found in nature<sup>23</sup>.

**Figure 3:**WWF Risk Filter weightings table



Source: WWF BRF 2023

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# How Candriam addresses physical risks linked to Natural Capital in its investments.

Natural capital has always been integrated in Candriam's ESG model, with a double materiality lens. What has changed recently is the systematic assessment and integration of biodiversity related topics with a dedicated approach and associated metrics. We combine an activity-level assessment used to provide an order of magnitude on the impacts on biodiversity related to our investments, with an asset-level assessment that allows to have a much more local and contextualized evaluation of impacts and risks related to biodiversity.

Biodiversity impacts are local and context-dependent. A same activity won't have the same biodiversity impacts if it is undertaken in an already artificialized urban area or in a pristine ecosystems. It is therefore crucial to develop an asset-level approach, that will consider the relevant topics (water, protected areas, forest etc) in a local context.

Our geographical analysis allows us to identify corporates' assets location and the localised nature-related impacts and dependencies they face.



**Figure 4:**Assessment of Water Risk Levels across a mining company's assets



Source: Candriam

Mapping a mining company's assets (above) helps us identify key biodiversity-related issues. We can assess specifically which of a mining company's operating mines are facing water-related risks, currently and in the future. This evaluation helps guide our engagement efforts and ultimately inform our investment decisions.

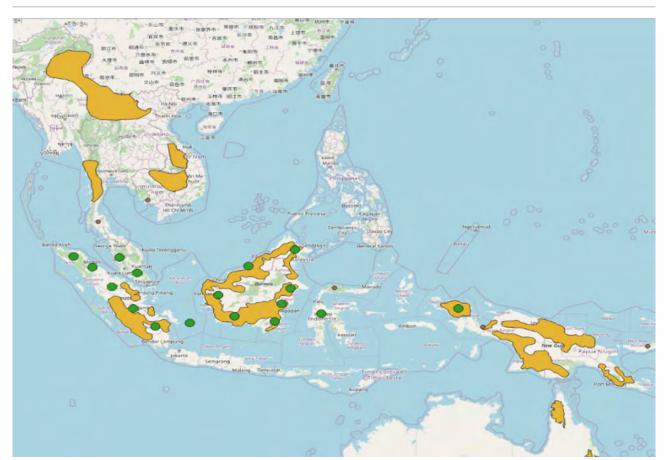
The WWF Risk assessment highlights that several industries are highly impactful/dependent on forest productivity and tree cover loss. As an illustration, palm oil production is one of the primary drivers of deforestation in south-east Asia, especially in Indonesia, Malaysia and Papua New Guinea. Palm oil deforestation in these three countries alone amounted to 19 000 hectares in 2021, equivalent to

an area the size of Washington D.C<sup>24</sup>. Considering the European Union's recent measures to prohibit products originating from deforestation, it is critical for concerned companies to understand the risk exposure of their supply chains.

Mapping out the relationship between supply chain and deforestation is a complex exercise, but can provide valuable insights:

**Figure 5:**Mapping of the relationship between Palm Oil Mills and Deforestation Trends in S-E Asia





Source : Candriam

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# Natural Capital and Impact Investing

Candriam's fund of private equity funds strategy is the result of a diligent selection of funds with an embedded thematic of natural capital conservation. To be certain that these investments are truly making a difference, the team meets with impact experts during the due diligence phase to assess the sturdiness of impact methodology. After the investment is made, the team regularly undertakes

impact reporting of all the companies within the investee funds. This reporting is based on precise KPIs, derived from impact themes that are each related to a UN Sustainable Development Goal (SDG). Here are some of the most relevant SDGs, impact themes and KPIs that have been used to measure impact regarding natural capital:

UN SDG	Impact theme	КРІ
12 RESPONSIBILE CONCOMPTION AND PRODUCTION CONCOMPTION REPRODUCTION Resource Efficiency	Waste Management	Pieces of litter registered
		Waste under management (in EUR)
	Resource Efficiency	Single-use packages avoided
13 CLIMATE	Greenhouse Gas Reduction*	Reduce carbon emissions by x%
<u>•</u>	Healthy Ecosystems	Tons of animal free whey
		Tons of meat analogues sold
	Circular Solutions	Proven efficacy and non-toxicity of bio-insecticides in commercial trial

\*As seen on p.6, Greenhouse Gas Reduction is essential to mitigate climate change and thus combat the depletion of natural capital Source: Candriam



Through its investments in these impact-focused private equity funds, Candriam has already invested in numerous companies that have a positive effect on natural capital:

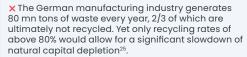
> **Activity Impact Relevant SDGs**

> > previous year<sup>26</sup>.

actions to improve them.



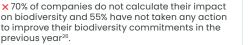
**Resourcify** provides a platform for commercial waste producers to manage all waste operations centrally and digitally. This will enable and incentivise waste producers to optimize recycling by offering a digital overview and treatment options and results.













Nature Metrics is the world's leading provider of environmental DNA biodiversity monitoring data to the extractives, infrastructure and marine markets which are regulated and required to monitor and report their impact on biodiversity.

> × Concrete industry represents 8% of CO2 emissions and releases harmful chemicals into nature, especially when buildings are demolished<sup>27</sup>.

identify the most impacted areas and take concrete

biodiversity impact. In turn, this will be able to







Prometheus Materials delivers sustainable building materials that accelerate the world's transition to a carbon-negative future. Using biomimicry, the company has developed a technology that uses naturally occurring microalgae to produce a bio-cement that offers an affordable, strong, and durable alternative to carbon-intensive portland cement.

✓ Prometheus Materials uses bio-concrete as a substitute to classical concrete to decrease harmful emissions and excludes dangerous chemicals from the production process.



Our fund of private equity funds strategy strives to support carbon impact reduction in existing industries by investing in funds that build long-term decarbonisation plans for their portfolio companies. Its underlying funds engage with management in their transition journey to meet carbon intensity reduction targets. To achieve these objectives, funds often hire operational experts that support underlying companies in the set up of specific solutions. For instance, one of them, fostering the development of French "industry 4.0" SMEs, has selected the climate strategy consulting firm Carbone 4 to help it achieve its -25% carbon emission reduction target.

This specific fund works on scope 1, 2 and 3 emissions through various initiatives that encourage sobriety measures and lower carbon intensity. For example, one of its actions was the electrification of portfolio companies' vehicle fleet and the replacement of downstream airfreight by road transportation. The fund also upgrades portfolio companies' production site by moving them into better energyperforming systems. Finally, the fund also rationalises supply-chain purchasing policy when possible.

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## Looking ahead.

The process of integrating natural capital in investment decisions is gaining traction as frameworks are being developed and the number of investment options is growing across both public and private markets<sup>28</sup>. Furthermore, the regulatory landscape is transforming in a favourable direction:

The most recent UN Biodiversity Conference of the Parties for biodiversity (COP 15) that took place in Montreal back in 2022 clearly defined objectives to finance biodiversity strategies and action plans. Target 19 aims for the mobilisation of \$200 billion per year by 2030, notably through the leverage of private finance, "encouraging the private sector to invest in biodiversity, including through impact funds and other instruments" <sup>29</sup>.

Unveiled in September of 2023, The Task Force on Nature-related Financial Disclosures (TNFD) aims to establish a standardised framework for organisations to disclose financial risks and opportunities tied to nature. The latter comprises two key components: the LEAP method, which assesses a company's impacts and dependencies on biodiversity, and the disclosure framework, which encourages greater transparency regarding internal biodiversity strategies. This initiative helps companies understand their double-materiality relationship with nature, while promoting actions to mitigate both impacts and risks<sup>30</sup>.

Additionally, on the disclosure side, the EU is deploying its Corporate Sustainability Reporting Directive (CSRD)<sup>31</sup>, which requires companies to publish information about biodiversity in four categories: risks, opportunities, dependencies and impacts.

Given the rise in awareness and changing environment in terms of access to information and regulation, it may only be a matter of time until risks and opportunities associated with natural capital are fully integrated into investment decisions.

Through its investments in both private and public financial markets, Candriam wishes to be among early movers of this shift. Notably, Candriam aims to place the environment at the heart of its second impact fund of private equity funds strategy. Along its focus on the environment, natural capital preservation will be one of the central investment themes.

## Dive Deeper.

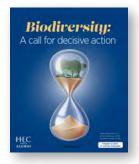
For further reflection, the following reports offer detailed insights into the link between natural capital and finance in:



### Candriam

Biodiversity: the new investment frontier

candriam.com



#### **HEC Paris**

Biodiversity: A call for decisive action

https://livreblanc.hecalumni.fr/HEC-2022-6-7-WEB-LR.pdf



### **CFA Institute**

Integrating Natural Capital and Biodiversity in the Investment

cfainstitute.org

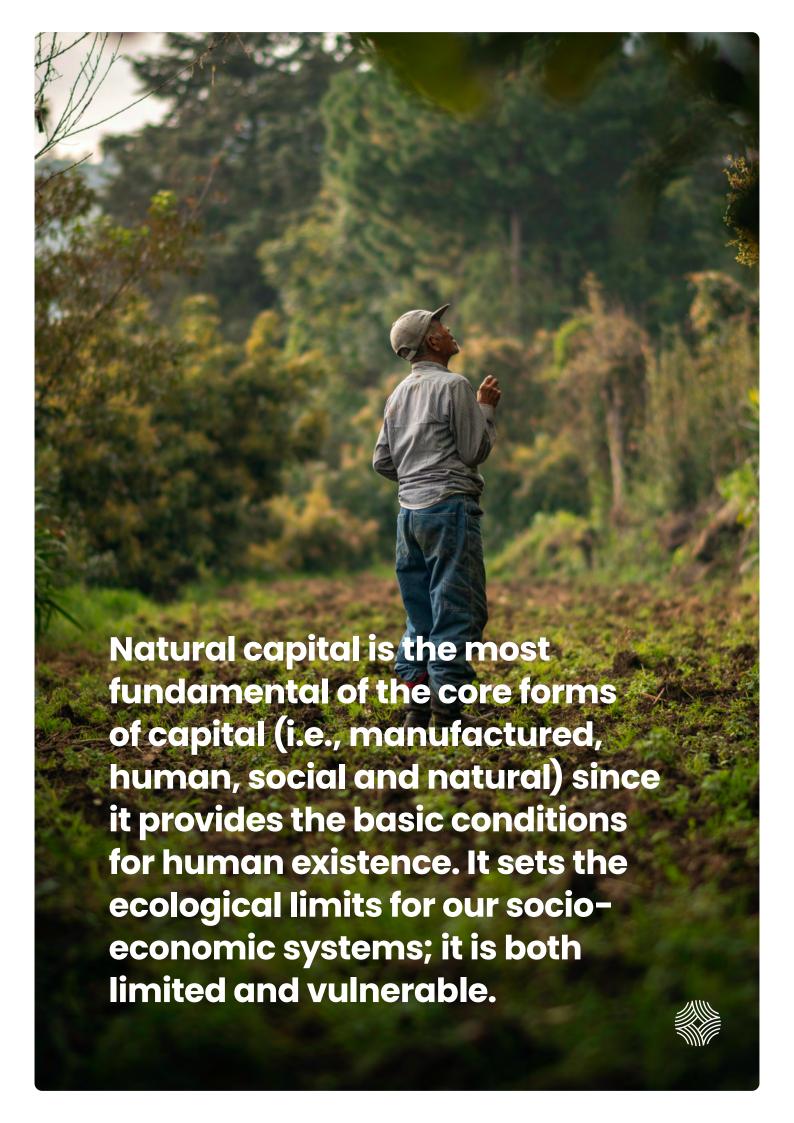


### Nate Hagens

The Great simplification

thegreatsimplification.com

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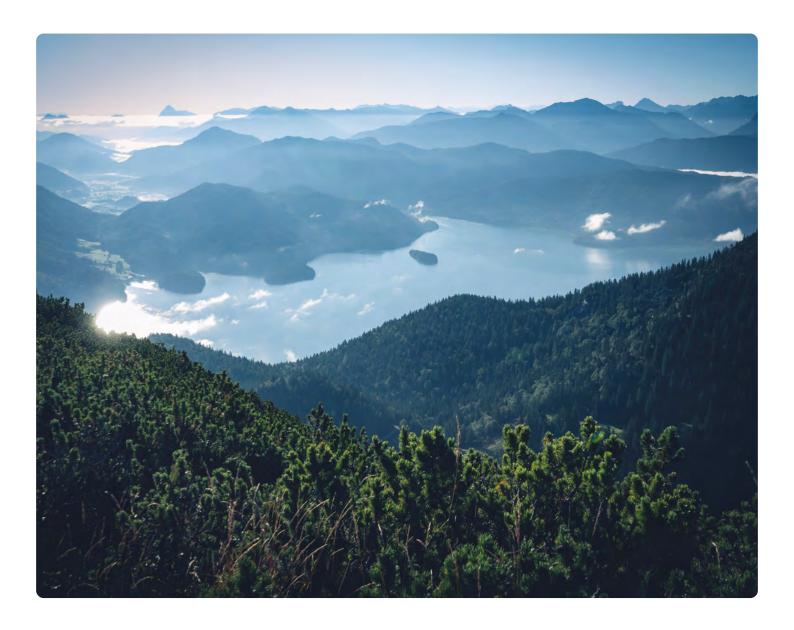
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AUM at end June 2023\*



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All our investment strategies involve risks, including the risk of loss of capital. The subscription or acquisition of Units of the Fund entails, in particular, the following risks: risk of loss of capital, equity risk, interest rate risk, credit risk, liquidity risk, concentration risk, volatility risk, leverage risk, ESG Investment risk, details of which are set out in Appendix 1 of the Fund Prospectus.

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\*As of 30/06/2023, Candriam changed the Assets Under Management (AUM) calculation methodology, and AUM now includes certain assets, such as non-discretionary AUM, external fund selection, overlay services, including ESG screening services, [advisory consulting] services, white labeling services, and model portfolio delivery services that do not qualify as Regulatory Assets Under Management, as defined in the SEC's Form ADV. AUM is reported in USD. AUM not denominated in USD is converted at the spot rate as of 30/06/2023.







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