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SUSTAINABLE BY NATURE: OUR BIODIVERSITY ROADMAP

BNP PARIBAS
ASSET MANAGEMENT

The sustainable investor for a changing world

CONTENTS

INTRODUCTION **3**

EXECUTIVE SUMMARY **4**
The importance of biodiversity to BNP Paribas Asset Management and our clients 8
What does this mean for a large financial institution like BNP Paribas Asset Management? 8
The intersection of climate change and biodiversity loss 9
What does this mean for risk management? 9

1. ESG integration - Research, ESG ratings, portfolio management **12**
Taking stock of our own dependencies and impacts 14
Our water and forest footprints 15
Reporting on our water target 16
Water efficiency 17
Our exposure to deforestation 21
Strength of the forest policy, commitments and traceability 23

2. Stewardship **26**
Public policy 28

3. Responsible business conduct **29**

4. Focus on the future **31**
Collaborating to improve the availability and usability of investment-relevant data 31

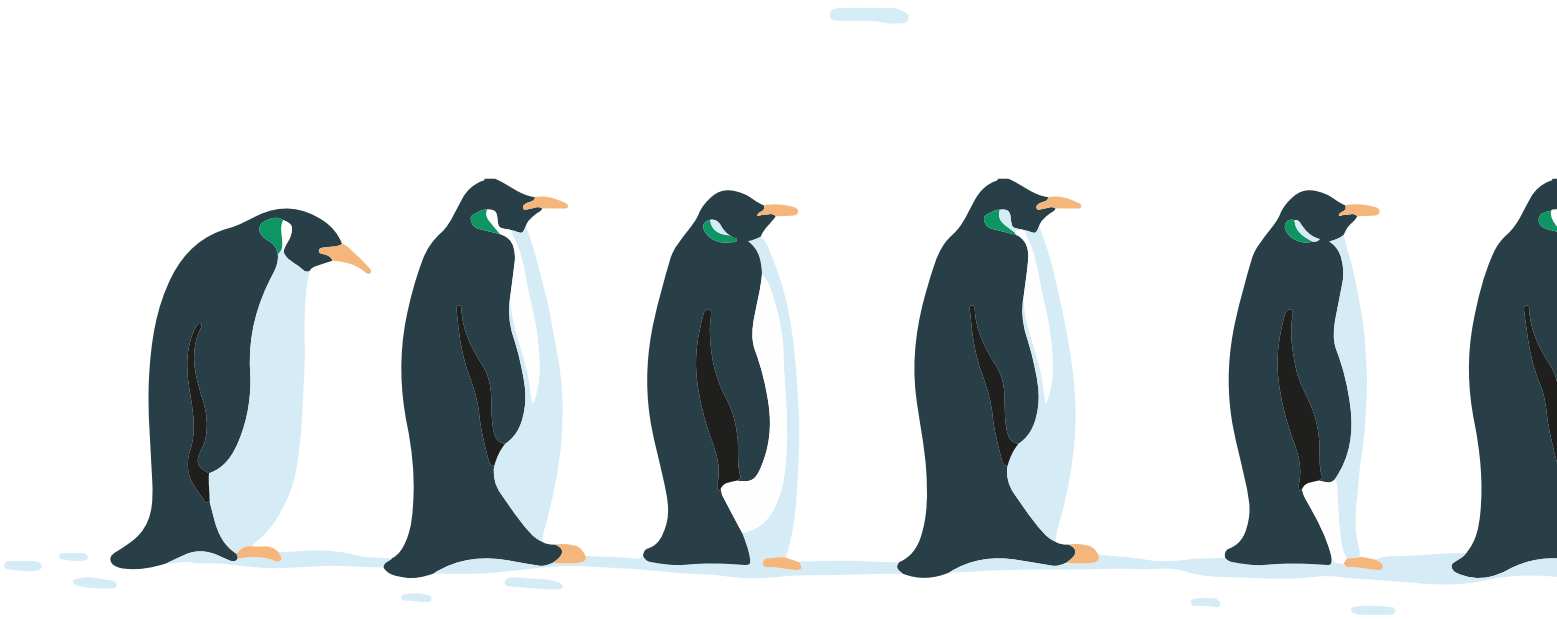
5. Directing capital towards solutions **33**

6. 'Walking the talk' **34**

Conclusion **36**

Appendix 1: Our participation in biodiversity-focused initiatives 37

Appendix 2: Key performance indicators 38



INTRODUCTION

According to the world's leading scientists, the natural world is in crisis. We are losing biodiversity – the very fabric of life on Earth – at an alarming rate. What does this mean for us as a large financial institution? According to the most comprehensive scientific assessment, 'the diversity of nature maintains humanity's ability to choose alternatives in the face of an uncertain future'.[1] We would be poor investors if we did not seek to preserve our long-term ability to choose alternatives in the face of uncertainty. We still have opportunities to build the future our clients want and need, but our options are dwindling: Biodiversity loss threatens the achievement of 80% of the United Nations' Sustainable Development Goals sub-targets related to poverty, hunger, health, water, cities, climate, oceans and land (IPBES, 2019).

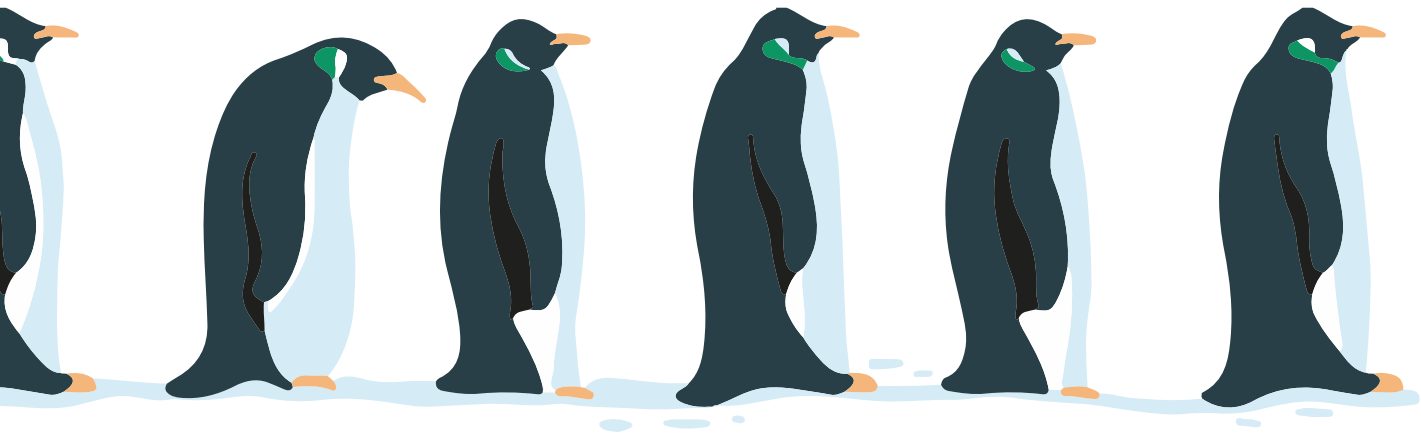
In 2019, we published our roadmap for providing long-term sustainable returns – our Global Sustainability Strategy (GSS). With this paper, we build on that framework with our position on the biodiversity crisis.

We communicate our positions on key issues in order to inform our clients and prospective clients, so that they know with whom they are entrusting their funds. We also aim to influence our peers and policymakers, because we cannot solve this problem on our own.

This paper is not simply a statement of our awareness of this crisis; more importantly, it details our views on the nature and urgency of the crisis and how we are actively responding to it.

> *"The story of the biodiversity crisis is a story of value destruction on an unprecedented scale. We understand that this is about more than just money – life is material to us too – but the financial estimates alone are staggering, in terms of what we might lose and what we might gain if we change course now. We can, and we must, secure a better future for our clients and for society."*
>
> **Jane Ambachtsheer**, Global Head of Sustainability, BNP Paribas Asset Management

1 IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany. 56 pages. https://doi.org/10.5281/zenodo.3553579



EXECUTIVE SUMMARY

Our mission at BNP Paribas Asset Management is to deliver long-term sustainable returns to our clients. By 'sustainable', we mean both returns that can be sustained over the long term, and returns that are in balance with society and the environment. These two meanings of sustainable are inseparable – we cannot deliver long-term returns without helping to achieve the energy transition, environmental sustainability and a more equal and inclusive financial system. To do so, we embrace our role as future makers: We have an important role to play to ensure a just and sustainable future for our clients.

Our strategy
We have developed a biodiversity roadmap based on the six pillars of our approach to sustainability.

1. Integration of environmental, social & governance (ESG) considerations

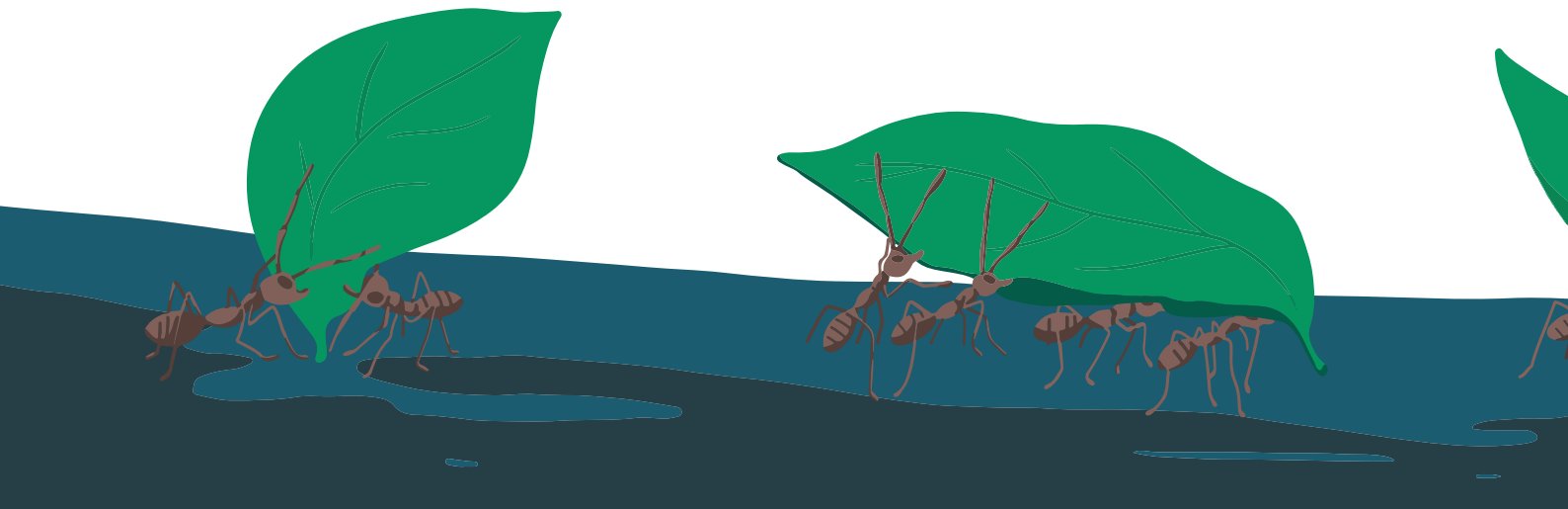
- We are expanding the incorporation of biodiversity into our approach to ESG integration
- We have used a variety of tools to understand our own dependencies and impacts, and conducted analysis of our global assets under management (AUM) to understand our exposure to water and deforestation risks. Some key findings:
  - Both water stress exposure and direct water intensity data are available for 17% of our corporate AUM. On average, these companies withdraw 6% of their water from water-stressed areas.
  - Out of the 432 companies in which we are invested that report to CDP Water on at least one facility at risk from water stress, 20 declare having sites with water risks in the Yongding He river basin, China, the most water-stressed in the world.
  - We have developed a rating system for corporate deforestation policies and traceability systems. Through this, we have found that a large proportion of companies in relevant sectors do not satisfy our criteria to earn a 'strong' rating. Most notably, more than 30% of our AUM in relevant sectors is invested in companies with 'weak' or no policies.
  - Our deforestation analysis is limited to policies, not performance. Data that would allow us to evaluate the actual performance of our investments against deforestation goals is virtually nonexistent.

2. Stewardship

- We are expanding the incorporation of biodiversity in our voting and corporate engagements and will engage with the industries having the greatest adverse impacts on biodiversity, with a core focus on deforestation and water issues.
- Our expectations for corporations extend from board oversight of biodiversity impacts and dependencies to proactive lobbying for nature-positive public policies.
- We will continue to work to build a collaborative investor stewardship initiative to address biodiversity loss.
- Our proxy votes will continue to support shareholder proposals on climate, deforestation and other critical environmental issues.
- Our public policy advocacy will increasingly incorporate biodiversity considerations.

3. Responsible business conduct

- On an ongoing basis, we are enhancing the assessment of biodiversity issues in our approach to responsible business conduct.
- Our investment portfolios are built on a comprehensive set of sectoral policies that address a wide range of environmental issues.



4. Forward-looking perspective

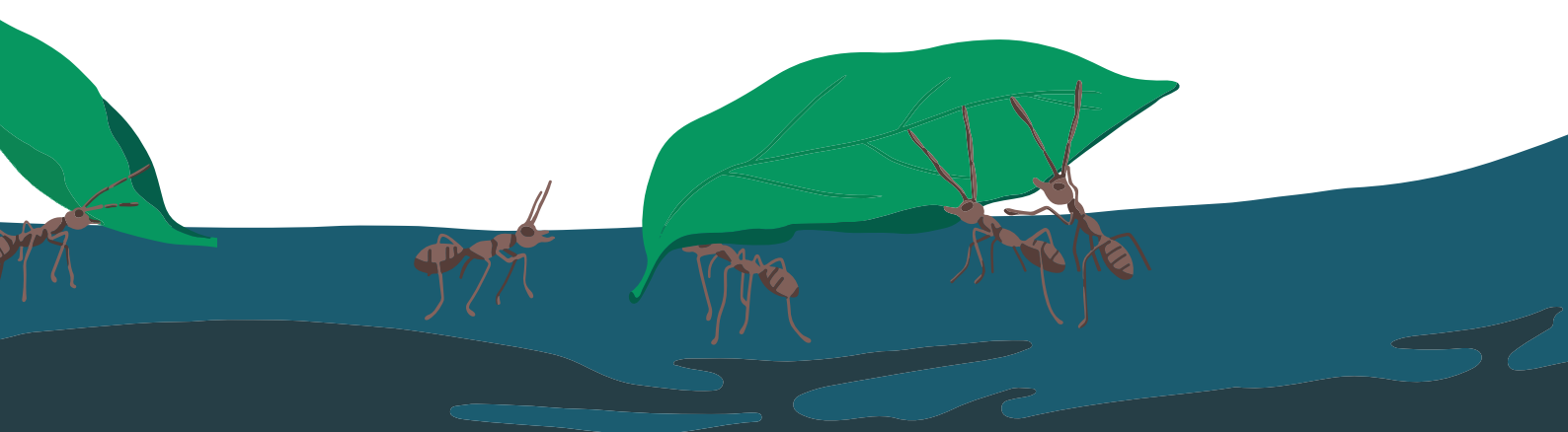
- We have undertaken a number of collaborative projects to enhance the quality and availability of biodiversity data:
  - In addition to working to improve corporate biodiversity footprints, we are funding a project to help CDP develop common biodiversity metrics and participating in the development of a Taskforce for Nature-related Financial Disclosures.
  - We helped to coordinate a successful search for a research provider to develop more effective biodiversity metrics for investor use and issued an investor statement on the need for biodiversity impact metrics.
- We will continue to increase the understanding of biodiversity issues in the investment community.

5. Sustainable+ product line

- We will provide our clients with a range of solutions targeted at solving biodiversity related challenges– We are offering a range of thematic funds focused on biodiversity themes, such as the blue economy and ecosystem restoration.

6. 'Walking the talk' through corporate social responsibility (CSR)

- We manage the biodiversity impacts of our operations
- We will educate colleagues and the industry about key environmental challenges:
  - We have a long-term goal to send zero waste to landfill, to eliminate single-use plastic in our offices and reduce our consumption
  - Many of our employee and community engagement efforts are directed towards encouraging nature-positive behavioural changes beyond the office
  - Since 2010, BNP Paribas has supported 27 research initiatives related to climate and biodiversity, with a total of EUR 18 million in funding



The importance of biodiversity to BNP Paribas Asset Management and our clients

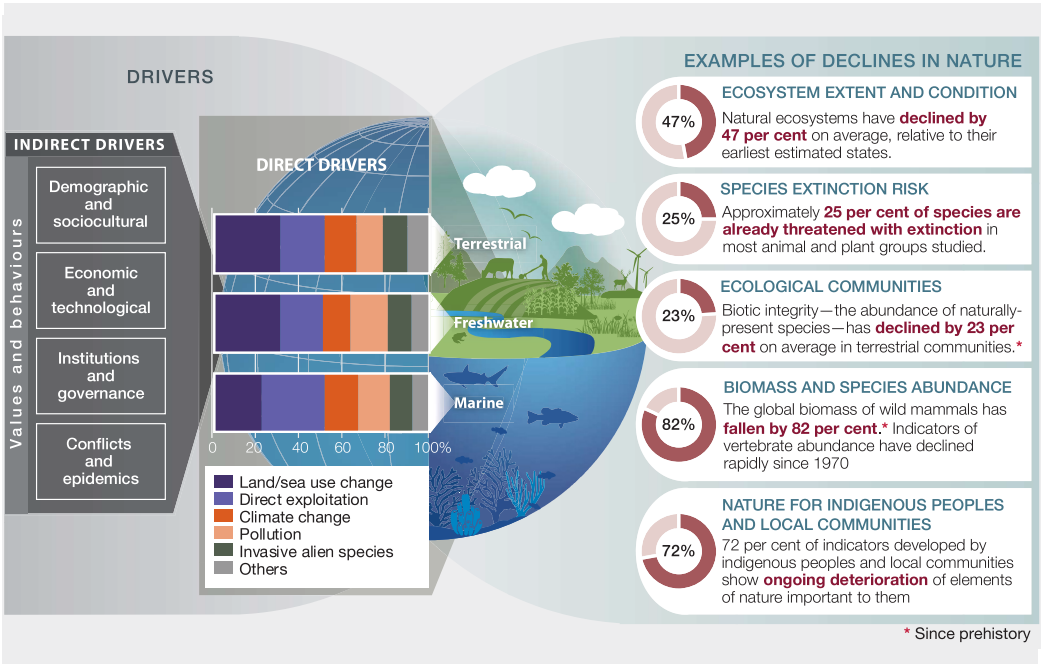
We are in the midst of Earth's sixth mass extinction event. Approximately 25% of all species on Earth is at risk of extinction by 2050, representing roughly one million species of plants and animals. By the end of the century, 50% or more is at risk (IPBES (2019)). To place this crisis in context, it is on a par with only five other mass extinction events, each of which destroyed 70%-95% of all species on Earth (Ceballos, *et al*. (2020))[2].

The unique factor in this event is our participation. Like the climate crisis, the biodiversity crisis is driven by human activity, meaning that we have both an opportunity and an obligation to act, for the benefit of our clients and, ultimately, human civilization and life on Earth.

The Convention on Biological Diversity defines biodiversity as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.'

Scientists have identified the following direct drivers of biodiversity loss:

- Land-use change
- Climate change
- Pollution
- Natural resource use and exploitation
- Invasive species



Source: IPBES Global Assessment Report Summary for Policymakers

The biodiversity crisis presents a unique threat to our economies, our investments and our way of life. It demands that we examine the benefits that healthy ecosystems provide to finance, and our role in preserving them.

2 G. Ceballos, P. Ehrlich, P. Raven, Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction. Proceedings of the National Academy of Sciences Jun 2020, 117 (24) 13596-13602; https://doi.org/10.1073/pnas.1922686117

Healthy ecosystems provide humanity with a vast range of crucial services, many of which are irreplaceable. These include provisioning services (food, fresh water, fuel, pharmaceuticals, etc.), regulating and maintenance services (climate regulation, erosion control, water purification, pest control, soil health, etc.) and cultural services (recreation, tourism, scientific and intellectual development, spiritual enrichment, etc.). These so-called 'ecosystem services' underpin our global economy, generally off our balance sheets, unnoticed, until they disappear.

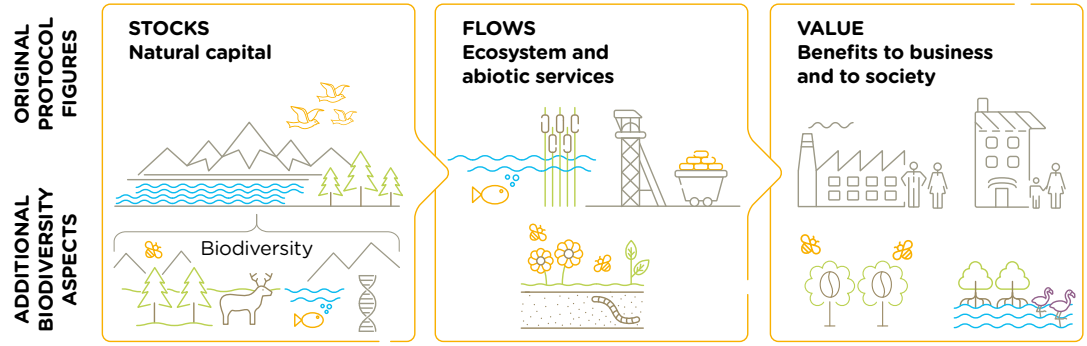
An extinction event does not fit easily into the types of crises investors are accustomed to managing. For example, if we view this crisis as an asset management problem, extinction can be compared to a company going out of business, in which case portfolio managers find a suitable substitute. When a species goes extinct, however, a unique asset has been destroyed for which there is no replacement. Further, as one study put it, 'extinctions breed extinctions' (Ceballos, *et al*. (2020)) due to the dependencies between species within an ecosystem. And prior to extinction, when the number of individuals in a population or species drops too low, that plant or animal can become an 'ecological zombie', no longer able to make significant contributions to ecosystem functions or services. (Ceballos, et al. (2020))

> *"Even though only an estimated 2% of all of the species that ever lived are alive today, the absolute number of species is greater now than ever before. It was into such a biologically diverse world that we humans evolved, and such a world that we are destroying."*
>
> (Ceballos, *et al*. (2020)

Biodiversity is not simply the variety of life, but how these organisms interact with each other to form healthy ecosystems. Biodiversity is nature's expression of resilience. It not only protects ecosystems from external shocks, it allows them to function properly. Resilience is, in itself, a pivotal ecosystem service. Its breakdown exposes us to physical risks, including global pandemics. Up to 75% of all emerging diseases, including COVID-19, are zoonotic, meaning that they jumped from wildlife to humans.[3] Intact ecosystems, particularly forests, provide us with a buffer from these diseases. Habitat destruction and the wildlife trade are simultaneously driving biodiversity loss and exposing humans and our economies to severe risks.

As the Dasgupta Review on the Economics of Biodiversity aptly stated: "The human economy is embedded in the biosphere." According to the World Economic Forum, half of global GDP is threatened by nature loss and, for the first time in the WEF survey's 10-year outlook, the top five global risks in terms of likelihood are all environmental, including major biodiversity loss (World Economic Forum: Global Risks Report 2020).

The relationship between biodiversity and natural capital stocks, flows, and values



Source: Adapted from Figure 1.1 of the Biodiversity Guidance to Accompany the Natural Capital Protocol 2016.

3 https://environmentlive.unep.org/media/docs/assessments/UNEP_Frontiers_2016_report_emerging_issues_of_environmental_concern.pdf

What does this mean for a large financial institution like BNP Paribas Asset Management?

It may seem counterintuitive that something as formidable as the global financial system, or a financial institution such as BNP Paribas Asset Management with nearly EUR 0.5 trillion of assets under management, could be vulnerable to the loss of something as small as a bee.

Bees are an underappreciated, and undervalued, asset. More than just a provider of honey, they play a critical role in human nutrition and the health of the ecosystems they support. Remove them, and things begin to fall apart, with significant consequences for economies and human health. Consider the following statistics on the importance of animal pollinators, which, in addition to bees, include a wide variety of insects, bats and birds:

- Close to 75% of the world's crops producing fruits and seeds for human consumption depend, at least in part, on pollinators for sustained production, yield and quality.[4]
- Bees are responsible for pollinating about one-third of the world's food supply. In the US, honey bees alone provide pollination services valued at between USD 15 billion and USD 20 billion annually.[5]
- Crops that are dependent upon pollinators ('pollinator-mediated' crops) account for about 40% of the global nutrient supply for humans, representing more than 90% of vitamin C, 100% of lycopene, nearly 100% of certain antioxidants, the majority of lipids, more than 70% of vitamin A and 62% of fluoride.[6]
- Timber and biofuel production (canola oil) also depend, in part, on insect pollination.

In recent years, alarming declines in insect and bird populations have been recorded, including a study that found that approximately 75% of all flying insects in national parks in Germany disappeared in 25 years (cited in WIA (2017)). Larger animals have not fared much better: approximately 70% of all individuals of vertebrate species have disappeared over the 50 years since 1970 (Ceballos, et al. (2020)).

When bees and other insect pollinators disappear, the birds that eat them and the plants they pollinate disappear. Thus begins a chain reaction, with severe implications for global food production, including soil health, water purification, pest and disease regulation and a wide range of other ecosystem services that these species provide to humanity, free of charge.

The loss of pollinators provides one telling example of how difficult it is to accurately measure the economic impact of biodiversity loss. A recent study placed the economic value of insect pollination in the US at USD 34 billion, based on 2012 data.[7] But the larger cost in terms of human sustenance and nutrition is substantially greater, potentially impacting all sectors of the economy that depend upon a healthy, well-nourished workforce. One estimate places the cost of pollinator loss alone at more than USD 500 billion per year.[8]

We understand that these costs are likely to be significant underestimates for at least three reasons:

- The enormous complexity involved in valuing the accelerating destruction of complex, integrated systems that provide so many services essential for life and economic activity
- Certain ecosystem services are irreplaceable
- Only a portion of the costs can be translated into financial terms. The intangibles, which include the knowledge lost when species disappear before they have even been discovered – are priceless.

The estimates that we have seen, however, are credible and large enough to threaten global financial stability and thus our ability to continue to deliver sustainable returns to our clients. As fiduciaries, we have an obligation to act.

4 http://www.fao.org/3/i9527en/i9527en.pdf
5 https://insights.osu.edu/sustainability/bee-population
6 Pisa, L., Goulson, D., Yang, EC. et al. An update of the Worldwide Integrated Assessment (WIA) on systemic insecticides. Part 2: impacts on organisms and ecosystems. Environ Sci Pollut Res 28, 11749–11797 (2021). https://doi.org/10.1007/s11356-017-0341-3
7 https://www.sciencedaily.com/releases/2021/02/210203144555.htm (The economic value of insect pollinators was $34 billion in the U.S. in 2012, much higher than previously thought, according to researchers at the University of Pittsburgh and Penn State University. The team also found that areas that are economically most reliant on insect pollinators are the same areas where pollinator habitat and forage quality are poor.)
8 https://insights.osu.edu/sustainability/bee-population

The intersection of climate change and biodiversity loss

It is well understood that climate change is a significant driver of biodiversity loss. It is perhaps less well understood, however, that biodiversity loss is also a significant driver of climate change. These twin crises are inextricably linked – we cannot address one without considering the other.

As we explain in our Global Sustainability Strategy: "There are [...] different ways to get to the 1.5°C target, and the path we choose will have different implications for society and for biodiversity. If we achieve 1.5°C at the expense of biodiversity, we will have redefined the term 'Pyrrhic victory.'" Climate strategies that balance significant emissions today against the promise of carbon capture technology employed decades from now may have devastating impacts on ecosystems. This is a particularly critical challenge for the development of biofuels, which require a careful lifecycle analysis that accounts for land-use changes, farming methods (including pesticide and fertilizer use), and indirect pressures on food crops. In addition, scientists are telling us that we cannot limit global warming to 1.5°C without preserving biodiversity.[9] We are therefore forced to confront these twin crises together, in all of their complexity.

What does this mean for risk management?

Investors thrive on their ability to take calculated risks – risk and reward are viewed as two sides of the same coin. Sophisticated investors are comfortable with risk. The biodiversity and climate crises, therefore, demand new terminology. If a 'risk' is a negative event that may or may not occur sometime in the future, then the concept does not adequately capture what we are facing. Like climate change, biodiversity loss is an ongoing process, not a potential event far off in the future. There is a great deal of uncertainty regarding how this process may play out, and how negative and far-reaching the outcomes will be, but it is quite clear that continuing on a business-as-usual basis is driving us to disaster, and we must change course.

The Convention on Biological Diversity's goal to 'live in harmony with nature' presents enormous opportunities for investors, as society works to reorient consumption patterns and production methods. In parallel with the shift to a low carbon economy, this transition represents the most significant investment opportunity of our lifetimes. According to the World Economic Forum, these 'positive pathways' are estimated to bring USD 10 trillion in business value and create 395 million jobs by 2030.[10]

The asset management industry will need new tools and new approaches to risk management to properly address this threat, and seize this massive opportunity. For example, traditional risk modelling techniques tell us that the highest impact events are also the least likely to occur. These are often labelled 'fat tail' events, referring to their position on the bell curve. However, ecosystem collapse cannot be modelled using the same tools we use to predict random events. Ecosystem collapse is already happening, initiated and driven by human activity. It is proceeding according to biological processes and complex interactions between species, not by the laws of economics or statistical analysis. Too much reliance on our old models may mask the true nature of the threat we are facing and our role in driving it.

When we use the term '**systemic risk**' in this context, we are not merely speaking about threats to financial stability; we are speaking about the harm to society when critical life-support systems are damaged, or knocked out of equilibrium. This kind of threat is particularly difficult to model, with potentially unlimited downside risk.

All sectors of the economy face various forms of systemic risk, as damaged and destabilised ecosystems result in drought, famine, disease, and the inevitable mass migrations and conflict that accompany these unexpected, but predictable, disasters. This category of risk is the most significant and most difficult to value.

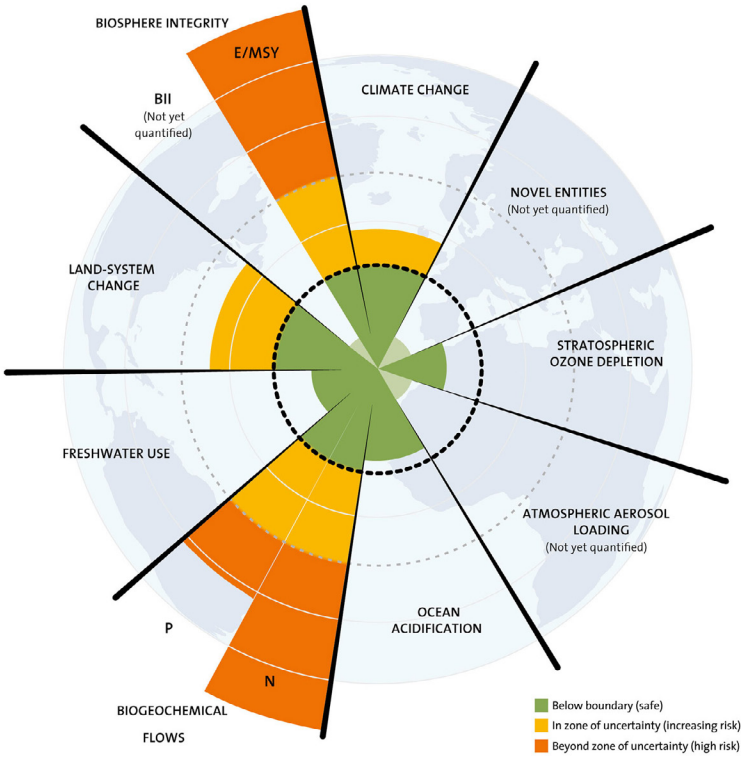
The Stockholm Resilience Centre has defined a set of nine planetary boundaries, delineating 'safe zones' for human activity. As we cross these boundaries, we enter into uncharted areas of great uncertainty. To date, we have crossed four boundaries – climate change, land-system change, biogeochemical flows and biosphere integrity. According to the Centre, we are in 'high risk' territory for the latter two zones. Each of these boundaries relates to biodiversity.

9 Dinerstein, E; Vynne, C., et al., A Global Deal For Nature: Guiding principles, milestones, and targets. Science Advances 19 Apr 2019: Vol. 5, no. 4, eaaw2869 DOI: 10.1126/sciadv.aaw286; https://advances.sciencemag.org/content/5/4/eaaw2869

10 Katri, A ; Waughray, D., A blueprint for business to transition to a nature-positive future (World Economic Forum, 15 Jul 2020), at: https://www.weforum.org/agenda/2020/07/future-nature-business-action-agenda-blueprint-climate-change-biodiversity-loss/

Planetary boundaries

In 2009, Johan Rockström, who was, at the time, the director of the Stockholm Resilience Centre, led a group of 28 internationally renowned scientists to identify the nine processes that regulate the stability and resilience of the Earth system. The scientists proposed quantitative planetary boundaries within which humanity can continue to develop and thrive for generations to come. Crossing these boundaries increases the risk of generating large-scale abrupt or irreversible environmental changes. Since then, the planetary boundaries framework has generated enormous interest within science, policy, and practice.



P: Phosphorus
N: Nitrogen
BII: Biodiversity Intactness Index
E/MSY: Extinction/Million Species per year

The nine planetary boundaries

As investors, the planetary boundaries framework is a useful reminder that, alongside earnings before interest, taxes, and amortisation (EBITDA), cash flow, debt, and the seemingly infinite range of factors sophisticated investors use to manage investment portfolios, we must also consider the dynamics of the planet. For all of human history, we have lived within limits. Now that we have crossed these lines, we need a map to show us where they lie, and to help us find our way back to safety.

The planetary boundaries remind us that we should think about our investments in the Earth system. Let us remember that if the Amazon rainforest becomes a savannah, it could lead to changes in ocean circulation in the Atlantic and to temperature increases in Asia. Also, the planetary boundaries framework implies there will always be investment trade-offs to make when you consider other dimensions than just carbon. Think about large scale hydro. It is a good way to produce low-carbon electricity, but what about its impacts on terrestrial and aquatic biodiversity? Once outside the planetary boundaries, we can no longer afford these trade-offs.

There are also obvious links to the Science Based Targets Network's ongoing work on water, land, oceans and biodiversity. As the name suggests, science-based targets are based on science and not arbitrarily chosen reduction targets. They allow companies to align with the Earth's ecological limits.

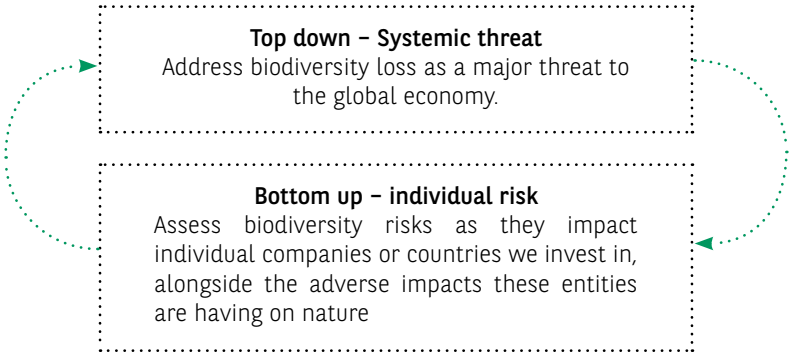
The most significant risk of biodiversity loss is not the risk to companies when they lose access to certain ecosystem services, the reputational risk to investors and financiers from financing harm to nature, or even the risk to financial stability when key ecosystem services begin to disappear. Though these are all critical and in urgent need of management, the paramount risk is the unravelling of nature itself, which is under way. This is an existential threat. It is difficult to overstate its magnitude.

Risk management focused solely on risks to individual issuers will not translate to a reduction of systemic risk. To manage systemic risk, investors need to bring all of their influence to bear on the problem, including more effective corporate engagement and public policy advocacy.

As investors in individual companies, we must also take a 'bottom-up' approach and consider how nature loss translates into financial risk to companies. To do so, we first need to understand each company's relationship with biodiversity and ecosystem services. There are essentially two dimensions to this relationship – dependencies and impacts – although these categories overlap considerably:

- Companies that are heavily dependent upon certain ecosystem services, such as food manufacturers, face **physical risk** when those services are depleted or critically compromised
- Companies that are having a negative impact on ecosystems may face **reputational** or **transition risk** when consumers and governments seek to reorient themselves to preserve nature, in the form of changing consumer preferences or new regulations
- Companies that are heavily dependent upon these services may also face **transition risk** as these services begin to be priced, or when scarcity drives up the prices of natural commodities, such as honey or timber.

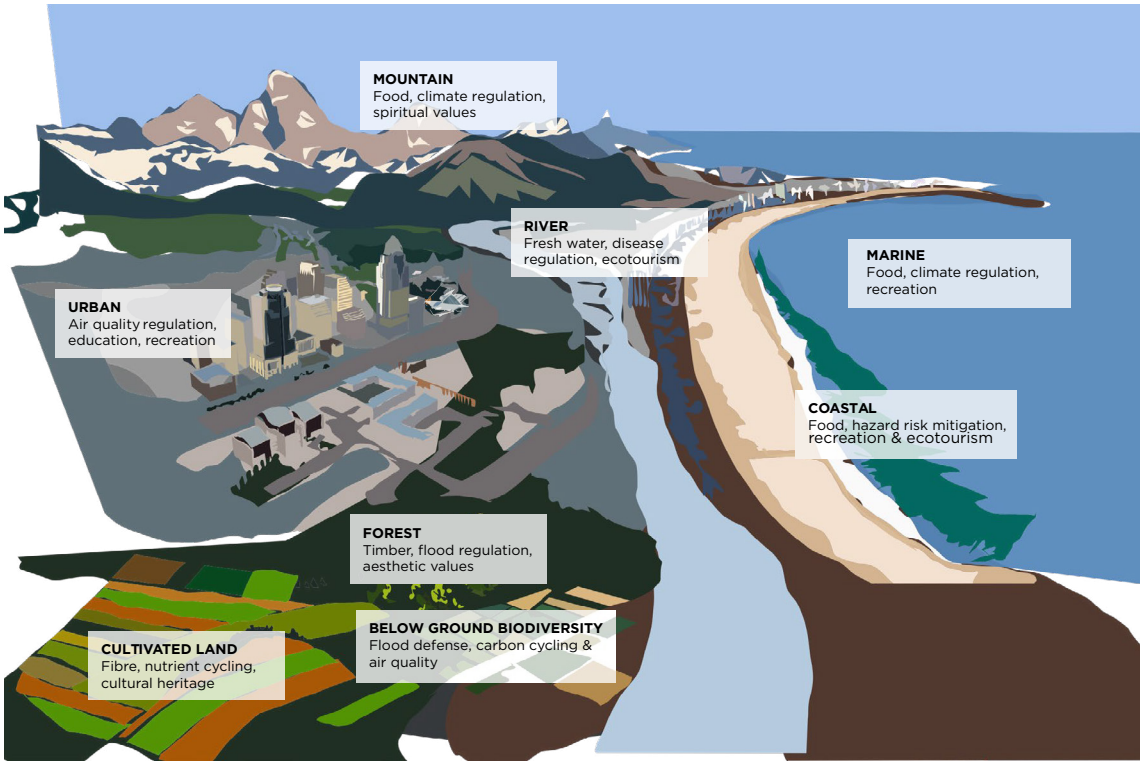
Biodiversity loss poses a systemic threat as well as company-specific risks



What is IPBES?

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body established by States to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. It was established in Panama City, on 21 April 2012 by 94 Governments. It is not a United Nations body. However, at the request of the IPBES Plenary and with the authorization of the UNEP Governing Council in 2013, the United Nations Environment Programme (UNEP) provides secretariat services to IPBES.

1. ESG INTEGRATION - RESEARCH, ESG RATINGS, PORTFOLIO MANAGEMENT



Source: Some of the services and benefits nature provides human societies and economies. Adapted from: Dasgupta et al. 2020. See Technical Annex or TA1.6 for more detail. https://sciencebasedtargetsnetwork.org/wp-content/uploads/2020/11/Science-Based-Targets-for-Nature-Initial-Guidance-for-Business.pdf

Our objectives

- Ensure that investment decision-making is informed by biodiversity considerations, particularly for key industries
- Advance the understanding of biodiversity issues in the investment and corporate communities

Our approach

As broadly diversified global investors, our portfolios carry a complex mix of physical, transition and systemic risks due to biodiversity loss, based on the dependencies and impacts of the companies and other entities we invest in.

We believe most of these risks are mispriced today, highlighting the importance of being invested in the companies that are adopting sustainable sourcing practices and offering sustainable products.

Climate change has been called an 'unhedgeable risk', meaning that only a portion of the financial risk to portfolios can be mitigated through traditional portfolio management techniques. The remainder of the risks cannot be hedged – they must be addressed at the source. The same can be said for nature loss. Corporate engagement and public policy advocacy are critical tools in addressing these kinds of systemic risks and are discussed in more detail later in this paper.

To do any of this well, we need good data that we can translate into portfolio management terms. We are making progress on this, but significant challenges remain.

Understanding our nature-related risk exposure

Seeking to understand our nature-related risk exposure has been like playing with Matryoshka dolls: the further you go, the more you find.

We are working to improve our understanding of the breadth of our risk exposure so that we can provide our portfolio managers with actionable insights. We conduct ESG sector reviews to bring our portfolio managers up-to-speed on the latest risks and opportunities. These reviews cover a wide range of sustainability issues, from human rights to nature loss, highlighting our view of the leaders and laggards in each sector. We have also contributed to case studies, in partnership with the Capitals Coalition and others, to explain our approach, looking at our dependencies or impacts in key sectors, including a study on seafood and plastics in the consumer sector.

In 2020, we used the ENCORE tool to look at our aggregate portfolio and understand the dependencies and sectors at risk (see page 15 for more on our dedicated ENCORE pilot).

Our ESG Integration Guidelines outline our goal to manage portfolios with more positive ESG characteristics than their respective benchmarks. For example, we have set guidelines to target a lower carbon footprint for each portfolio, relative to its respective benchmark. We are currently exploring how this approach applies to water, forests and biodiversity.

In 2020, we conducted a footprinting exercise to determine our overall exposure to certain water and deforestation risks. The results of this review are discussed on pages 15-25. This year, we launched a water and forest integration plan, focused on analysing key water and forest risks and opportunities at the company, sector and fund level. This includes identifying stewardship recommendations for portfolio managers, such as priority companies to engage, case studies to have in mind, or questions to ask the CFO in their next one-to-one meeting.

We will continue to drill down – from sectors to specific companies and then into their specific assets and supply chains, down to specific geographic locations to identify areas of water stress, biodiversity hotspots and land degradation. Our goal is to understand both direct and indirect risks to our investments and to nature. Our data collection and IT systems are improving each year and we feel confident that with our blended/multiple provider approach, using both public and private data sources, we have the necessary ingredients to improve our decision making. Much of this, of course, depends on corporate disclosure, and we continue to face significant data gaps. Later in this paper, we briefly discuss some of our efforts to fill these gaps.

Quantifying our nature-related impacts

Our portfolio managers rely upon our proprietary ESG scoring framework to understand each issuer's exposure to a broad range of ESG risks.

BNPP AM's proprietary ESG scoring framework is:

- **Comprehensive**: Covering more than 12 000 issuers
- **Focused on materiality**: Using a limited number of material, insightful metrics for each sector
- **Investment insight driven**: Built with and for investment professionals
- **Robust**: With a statistically rigorous model developed with our Quantitative Research Group
- **Dynamic and forward-looking**: Integrating unique insights through qualitative overlays
- **Managed by the Sustainability Centre**: To ensure the integrity and consistency of the framework

Thanks to these features, we believe our ESG scoring is a powerful tool to help investment teams **generate long-term sustainable investment returns for our clients**.

Today, our framework includes nature-related impact indicators, reflecting actual adverse events that have occurred, such as water pollution, deforestation, presence in key biodiversity areas, etc. While this data provides valuable information for our investment teams, we aim to develop more robust biodiversity impact metrics. This is why we established a relationship with Iceberg Data Lab and iCare & Consult to develop and provide us with biodiversity data that is tailored to our needs as global investors (see below and page 31).

Iceberg Data Lab and iCare & Consult's Corporate Biodiversity Footprint uses life cycle assessment data to quantify the environmental pressures along the entire supply chain of a given company, using asset level data if available. To date, terrestrial and freshwater biodiversity are relatively well documented in scientific literature and related environmental models such as GLOBIO3, developed by the Netherlands Environmental Assessment Agency. GLOBIO3 is used in the Corporate Biodiversity Footprint methodology to link quantified environmental pressures to biodiversity loss (expressed in Km² MSA, see box).

The environmental pressures that are currently covered in the Corporate Biodiversity Footprint methodology are the following:

- Change of land use (land occupation, land transformation, encroachment, fragmentation)
- Air pollution (nitrogen deposition)
- Water pollution (freshwater eco-toxicity)
- Climate change

Each environmental pressure is then translated into a quantified impact on biodiversity (MSA $_{\text{Climate Change}}$, MSA $_{\text{Land use}}$, etc) and then aggregated to compute the Corporate Biodiversity Footprint of a given company, expressed in Km² MSA.

MSA (Mean Species Abundance) measures the mean abundance of native species in a delimited space relative to undisturbed ecosystems (%) and is the reference metric used by IPCC, the Convention on Biological Diversity (CBD) and the IPBES.

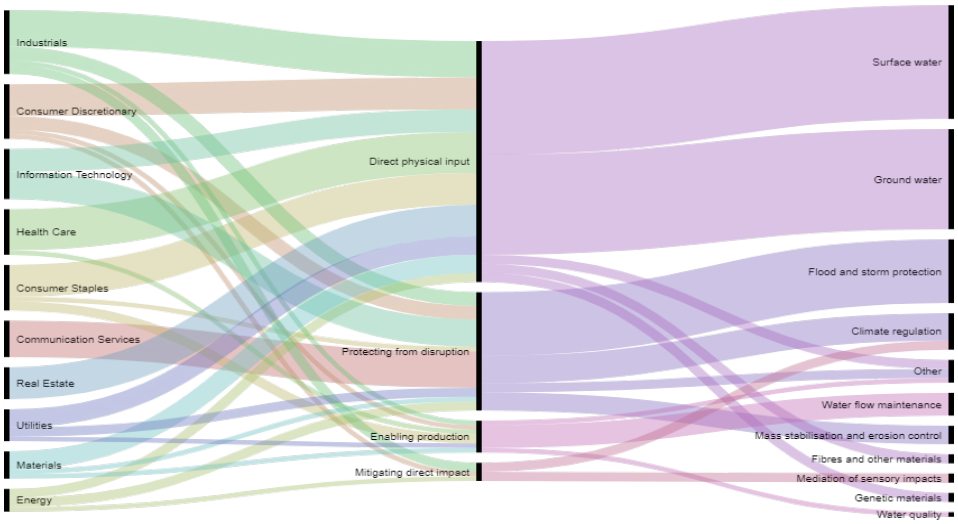
We are optimistic about the utility of this analysis, but do wish to be clear that many challenges remain ahead. Biodiversity in or beneath the soil, marine biodiversity, extinction risk and species richness dimensions have not yet been fully captured, and some pressures, such as invasive species, have yet to be modelled. This is not to say that scientists do not have good data on these aspects of the problem, but there is still a lack of data that is usable by investors, tying specific impacts to individual companies. We will continue to explore available and emerging data sets to enhance our understanding and provide as much transparency as possible.

We will also continue to closely follow the methodology updates of Iceberg Data Lab and iCare & Consult's Corporate Biodiversity Footprint, where we are a steering committee member, the Taskforce for Nature-related Financial Disclosures (BNP Paribas is co-chairing the working group setting up the TNFD), as well as other key initiatives, including Science Based Targets for Nature (see section 4. FOCUS ON THE FUTURE). As these frameworks develop, we will look to include relevant data in our proprietary ESG scoring framework as well as to inform our stewardship activities and thematic investment programme.

Taking stock of our own dependencies and impacts

BNP Paribas Asset Management's use of Natural Capital Finance Alliance's ENCORE dependency tool
To deepen our understanding of our biodiversity related exposure, we were among the first financial institutions to test Nature Capital Finance Alliance's ENCORE dependency tool. To do so, we took our aggregate assets under management in listed corporates and bonds and used the ENCORE database to understand our investees' direct dependencies on ecosystem services. We did not include financials, as ENCORE does not include indirect dependencies. The diagram below shows how our aggregate investments – grouped by GICS industry classification – are dependent on key ecosystem services.

BNP Paribas Asset Management's dependencies on ecosystems services per euro invested



Source: BNP Paribas Asset Management, ENCORE. This is a preliminary assessment. Partial view of BNPP AM's current corporate investments (equities, fixed income). View by GICS sectors. Figure does not include the financials sector.

What have we learned from using ENCORE?

- Water, flood/storm protection and climate regulation are the most important ecosystem services that our investment portfolios depend upon, confirming our current priorities.
- Granularity in the mapping is key. We will need to manually fine tune the mapping for some key sectors, such as agriculture, because current classifications are not granular enough to fully exploit the dependency profile given by ENCORE of production processes (such as large scale, small scale, etc.).
- ENCORE is useful as a first step. We will need to do deeper analysis of each company to inform our investment decisions, our direct engagements and our responsible business conduct policies.

Our water and forest footprints

In our Global Sustainability Strategy, we established a set of ambitious targets to improve the environmental footprint of our investments, with a focus on water and forests, by 2022. The high-level results of these initial footprinting exercises follow.

Footprint analysis is a useful tool to improve our understanding of our exposure to water scarcity and deforestation. It is not sufficient to assess the full range of actual and potential impacts to the environment our portfolio holdings may be causing, nor does it provide a full picture of our exposure to water and deforestation risks. However, it does help us to establish a baseline against which we can monitor our performance, and it provides a high-level compass to identify where closer analysis of individual issuers is warranted. This complements the suite of tools and analysis our ESG analysts perform at the sector and issuer-level and helps to identify key targets for direct engagement by our stewardship team and portfolio managers.

Reporting on our water target

In 2019, we set ourselves the following water target:

To improve the **water efficiency** of our investment portfolios, in particular in **water-stressed areas**, as well as to measure and disclose the water footprint of our portfolios.

We also committed to encourage water-intensive sector companies operating in **water-stressed areas** to significantly improve their water efficiency while ensuring water access to local communities.

Water is a harder environmental theme to capture than carbon, due to its local and temporal dimensions. The effects of water over-use and pollution varies depending on the time of the year and the vulnerability of ecosystems, local populations and businesses.

To report on our water target, we use three overarching key performance indicators:

1. Coverage and disclosure levels
2. Water efficiency of our corporate and sovereign investments
3. Exposure to water stress.

The indicators we have chosen cannot capture the full complexity of the water theme. For example, they focus on the availability of fresh water, and help us to identify heavy corporate water use, but do not address water pollution, a key threat to ecosystems. These indicators were chosen to maximise coverage, be applied at different levels of aggregation (such as corporate, countries and portfolios) and take into account local factors as much as possible[11]. Our data sources include S&P Trucost water data, the CDP water dataset, UN FAO Aquastat and the World Resources Institute[12].

What did we analyse?

We looked at two areas of our portfolios – equities and fixed-income securities we hold in publicly traded companies, which we refer to as corporate AUM, and the sovereign debt we hold, which we refer to as sovereign AUM.

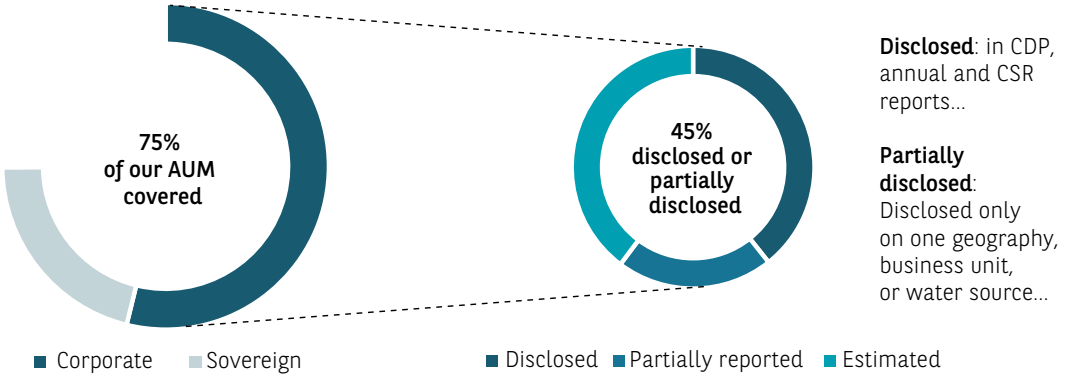
Coverage and disclosure levels

Relatively high coverage levels. By combining CDP water, S&P Trucost and UN Aquastat data, **our water analysis covers roughly 75% of our corporate AUM and nearly 100% of our sovereign AUM**.[13]

Corporate disclosure levels could be significantly improved. We used disclosed data for approximately 29% of our corporate AUM, including 10% from CDP's latest water questionnaire. We supplemented these corporate disclosures with partial and full estimates provided by S&P Trucost for 16% and 29% of our AUM, respectively. As we move ahead, we aim to encourage our investees to disclose their water footprint, especially if they operate in water-intensive sectors (See next section 2. STEWARDSHIP).

11 There is a trade-off between the objective of coverage maximisation and modularity on the one hand, and taking into account local factors on the other hand.
12 We use the most recent data where available (2018 or 2019, where possible). In some instances, in particular in sovereign investment analysis, we had to use older data.
13 We were unable to include other supranational investments, which represent less than 7% of our total AUM, due to lack of data.

Figure 1: Coverage level and disclosure levels of our water analysis, by AUM (abstracted and purchased water)



Sources: BNPP AM based on UN Aquastat, CDP Water and S&P Trucost

Putting our analysis into perspective[14]. We estimate that the **total accumulated annual water withdrawals of the companies in which we are invested represents approximately 75% of the world's total withdrawals**, when taking into account supply chains (35%, if supply chains are excluded). The largest proportion of water withdrawals is extracted directly by companies, rather than purchased from third parties. These figures are prone to double counting and very uncertain, as they rely heavily on estimates (Figure 2).

Figure 2: Putting our analysis in perspective

Sources: BNPP AM based on UN Aquastat, CDP Water and S&P Trucost

Water efficiency

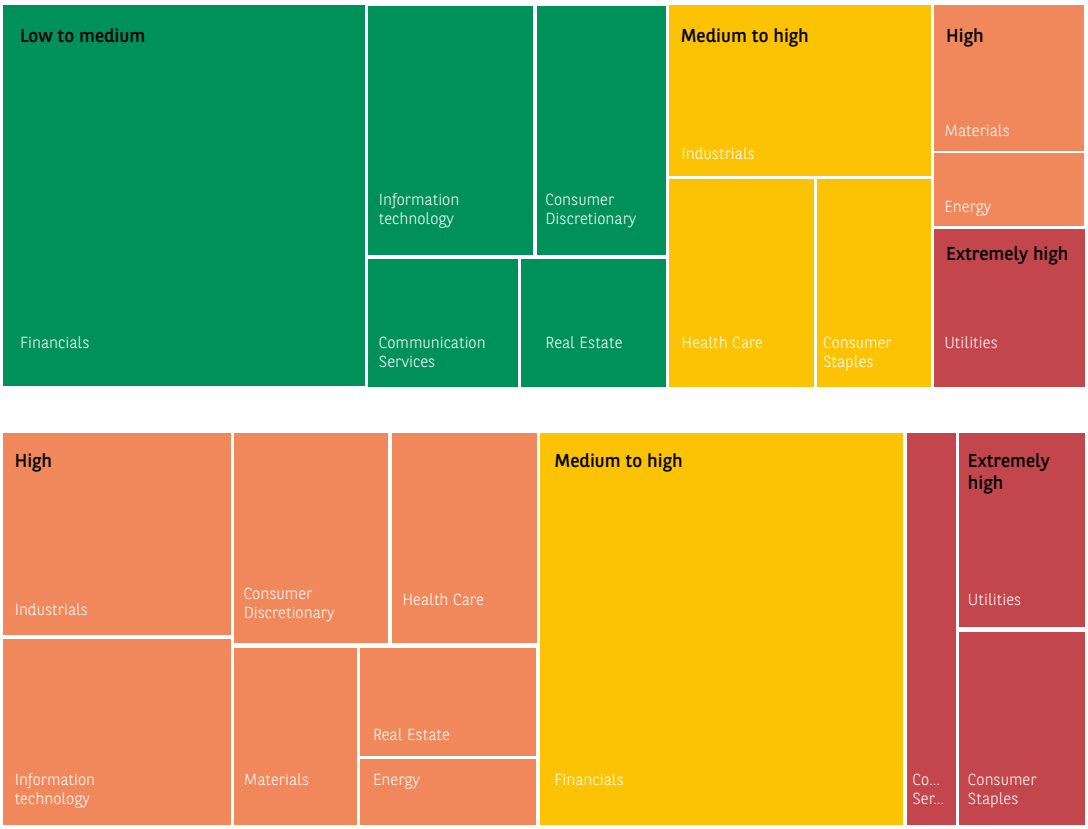
The average water efficiency of our investments. We define water efficiency, or water intensity, as the quantity of water, in cubic metres, required to generate one unit of revenue, in EUR million.

- Our corporate AUM's direct water intensity (including water extracted and purchased) is approximately **24 500 m³ per EUR million of net sales**[15], weighted by AUM. When including supply chains, this figure nearly doubles. This hides large sectoral disparities, as highlighted in the figures below.
- Our sovereign AUM's water intensity is approximately **25 000 m³ per EUR million of GDP[16], representing half the world's water intensity**.[17] This is probably due to our relatively lower exposure to countries that derive a large share of their GDP from agriculture, a water-intensive activity, but further investigation is needed.
- It is important to note that water efficiency, or intensity, does not necessarily correlate with impact to water systems or biodiversity. A very large, but highly water-efficient company, or an efficient company operating in an area of high water stress, may have an outsized impact on the availability of fresh water. Unfortunately, data is not widely available to allow us to make these calculations.

14 We sum the total water footprint of the companies in which we are invested to derive this figure, without taking into account ownership.
15 This metric includes disclosed and estimated data.
16 This metric does not take into account imported water that is the virtual water embedded in imported raw materials such as agricultural commodities.
17 Weighted average per unit of GDP of the top 20 countries representing 80% of the world GDP.

There are large disparities across sectors. Figure 3 shows the relative water intensity by GICS sector, weighted by AUM, of our investment universe.

Figure 3: Relative water intensity by GICS sector, weighted by AUM.
The first visual includes direct scope only (extracted and purchased water); the second includes both direct and indirect water intensity.



Sources: BNPP AM based on CDP Water and S&P Trucost

The above tables display the water intensity of our aggregate corporate equity and fixed-income investments, where the size of the box represents the relative portion of our AUM. The colour represents the relative water intensity, where darker red signifies higher intensity. We use both disclosed and estimated data to draw these conclusions.

Based on our analysis, when looking at the tables, we note some key take-aways:

- When considering only direct water withdrawals (extracted and purchased), over 60% of our corporate AUM is invested in sectors with a 'low to medium' average water intensity (less than 1 000 m^3 per EUR million of net sales). This is explained by our large exposure to the finance sector (first heat map). The picture changes when considering direct and indirect water use.

- When considering direct and indirect water withdrawals, no sector is 'low intensity': Water is a prevalent issue and it is essential to consider supply chains. Approximately 50% of our corporate AUM is invested in sectors with 'high' average water intensity (between 10 000 and 100 000 m^3 per EUR million of net sales).

- When indirect withdrawals are included, the consumer discretionary and consumer staples sectors' water intensity increases by 48x and 15x respectively, meaning that the larger proportion of its water use is within its supply chains.

- We find that in most cases, our weighted average intensity per AUM is lower than the sector-level average, suggesting that within most sectors, we invest more in companies that are relatively more water-efficient.[18]

- Our investments in the utilities sector significantly drive up our average intensity. While water withdrawal is an interesting risk exposure indicator (everything else being equal), additional indicators may be used to evaluate the potential impact of different sectors, such as water use, which captures the quantity of water withdrawn and used but not put back into the environment. We find, however, that reported data is not of sufficient quality across sectors to be used at this stage.

We will continue to monitor the water intensity of our AUM against this baseline. We will also seek to refine the analysis, by comparing the water intensity per unit of production at company level within sectors where it is possible, which may be more relevant than basing it on unit of revenue. Finally, we will investigate the use of additional indicators, such as water use as described in the paragraph above, that would allow us to draw complementary conclusions on the relative risk exposure and impact of different sectors and companies.

Water stress

Although responsible water use is important everywhere in the world, reliable access to clean water – for humans and ecosystems – is always a local issue. This is why we integrate water stress, where possible, in our analysis[19].

- **Water withdrawals in water-stressed areas**. Both water stress exposure and direct water intensity data are available for 17% of our corporate AUM (approximately 430 companies). On average, these companies withdraw **6% of their water from water-stressed areas**[20].

- **This figure masks large disparities at the individual company level**. In particular, the 26 companies with extremely high water intensity (over 100 000 m^3 per EUR million) withdraw more than 10% of their water from water stressed areas (Figure 4, darker bar).

- **Water is a local issue, but very few companies report at site level**. Out of the 432 companies in which we are invested that report to CDP Water on at least one facility at risk from water stress, 20 declare having sites with water risks in the Yongding He river basin, China, the most water-stressed in the world (Figure 5).

- **Our sovereign AUM are relatively less exposed to water stress than the world average**. Over 65% of our sovereign AUM's water intensity is contributed by countries with high, or extremely high, water stress. This is lower than the world's average, but predicted to increase in a business-as-usual scenario by 2040[21] (Figure 6).

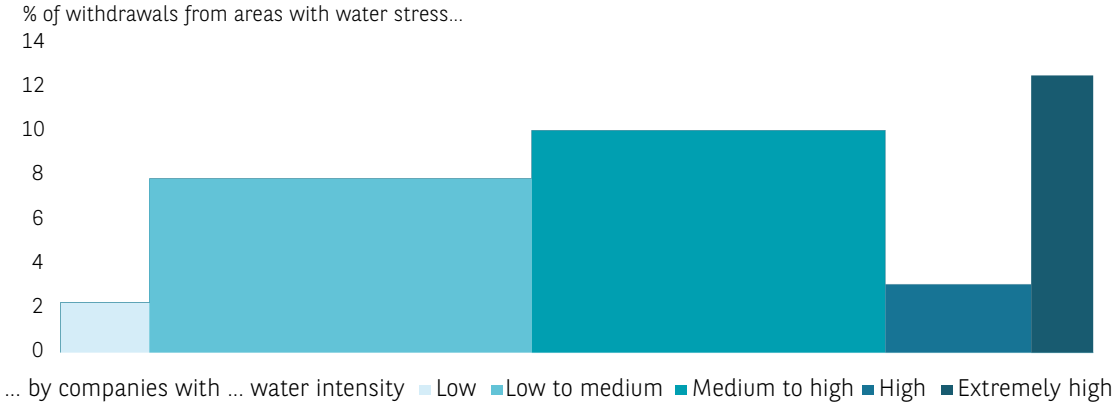
18 For intra-sector comparison and engagement, it may be necessary to analyse the data at a more granular level and compare companies based on their water intensity per unit of production rather than revenue.

19 Water stress: Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability. Higher values indicate more competition among users.
WRI:https://files.wri.org/s3fs-public/aqueduct-30-updated-decision-relevant-global-water-risk-indicators_1.pdf ;
We rely on CDP question W1.2d_C2_ that does not indicate a specific level of water stress.

20 Weighted by AUM.

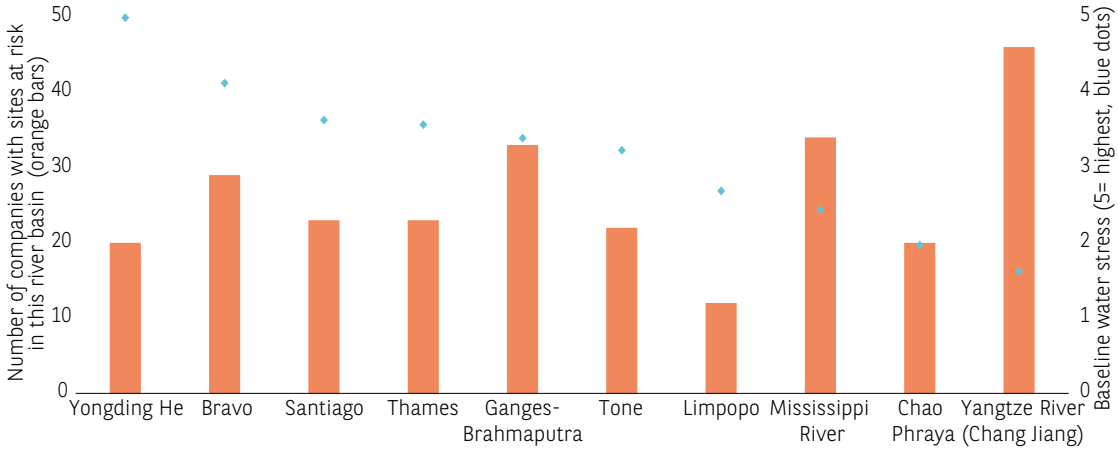
21 Using WRI central BAU scenario, 2040 in Luo, T., R. Young, and P. Reig. 2015. "Aqueduct projected water stress rankings." Technical note. Washington, DC: World Resources Institute, August 2015. Available online at http://www.wri.org/publication/aqueduct-projected-water-stress-country-rankings

Figure 4: Percent of water withdrawn in areas with water stress by companies classified in categories of water intensity, weighted by our AUM. The width of the bars indicate the number of companies for which we have data (N=432). (Data; CDP Water)



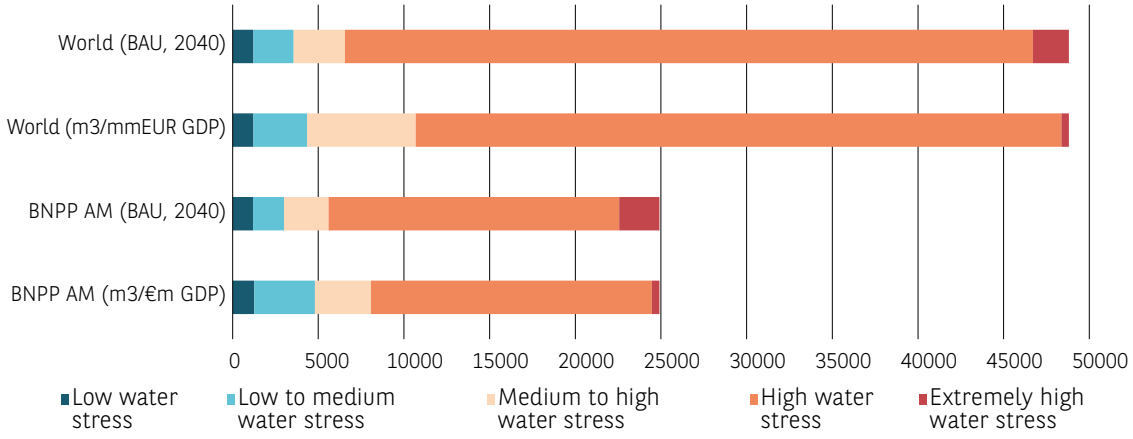
Data is available for 432 companies that, on average, withdraw 6% of their direct water from water stressed areas
Sources: BNPP AM based on CDP Water

Figure 5: Companies in our portfolios that disclose sites in high stress river basins stress. Data: WRI



Sources: BNPP AM based on CDP Water

Figure 6: Water intensity of our sovereign AUM (m^3 per EUR million of GDP), split by average water stress levels and compared to the world's average, current and 2040 (business-as-usual scenario)



Sources: BNPP AM based on UN Aquastat and World Resources Institute

Looking ahead

This analysis will be used as the baseline to evaluate our progress on our 2019 water target. Our objective is to continue to monitor the evolution at AUM level, but also at fund level. We find that while data availability has improved in recent years, some topics are still difficult to assess, in particular water stress and water access by local communities. We will strive to continue to develop relevant indicators and integrate new datasets to fill the gaps, and develop a more complete picture of our investments' risk exposure and impact on water.

Our exposure to deforestation

In 2019, we set the following forest target:

"To support global efforts to halve forest loss by 2020 and end forest loss by 2030, we have set targets for **relevant companies in our portfolios to comply with No Deforestation, No Peat and No Exploitation (NDPE) commitments by 2020 for agricultural commodities** (palm oil, soy, paper, timber, and beef products); NDPE commitments by 2030 from non-agricultural sectors (mining, metals, infrastructure)."

We recognise that policy-based indicators are only the beginning of the story. Data that would allow us to evaluate the actual performance of our investments against deforestation goals, however, is virtually non-existent. Every year, CDP sends its forests survey to companies that they believe are exposed to deforestation. In 2020, CDP reports a 31% response rate.[22] Very few companies report land conversion in hectares or other quantitative terms. For this reason, we use a 'policy-based' indicator (NDPE commitments) as an interim step towards our ultimate goal, which is to understand 'compliance' with NDPE commitments.

We are investigating ways to measure and estimate land use and land use change at the issuer and portfolio level, by using and combining new data sources (see page 24).

To report on our portfolios' exposure to deforestation, we used three overarching key performance indicators:

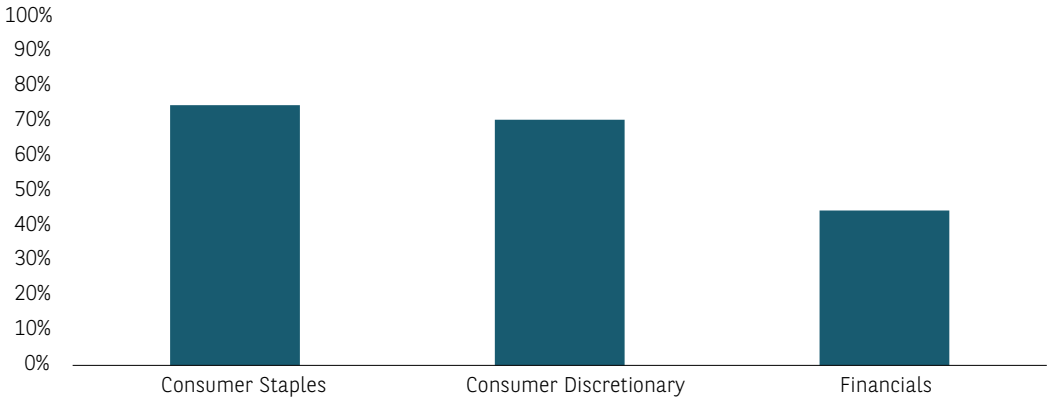
1. Transparency
2. Strength of the forest policy and commitments
3. Supply chain traceability practices.

The indicators were chosen because of their relevance, relative data availability and simplicity. Covered commodities include timber, palm oil, cattle products, soy and rubber, where possible. To perform the analysis below, we combined data from three key databases - CDP Forest, Forest 500, and SPOTT - to expand our coverage, but we find that these data sources use different criteria and cannot always be combined into one common dataset. These databases include companies that are the most likely to be exposed to deforestation through the agricultural commodities they produce or purchase, and their size and activities, in their operations and supply chains. We are investigating ways to integrate additional datasets in the future, such as TRASE tools (Appendix 2 highlights the indicators chosen for our assessment).

As detailed below, we found that an alarming number of companies that we presume to be exposed to deforestation risks do not disclose adequate information to allow us to evaluate their contribution to deforestation. Our analysis of corporate policies and traceability systems also demonstrates the need for substantial improvement, suggesting that the companies themselves are unaware of these risks. These findings are deeply concerning in light of the number of "no deforestation by 2020" commitments companies have made.

22 CDP_Forests_analysis_report_2020.pdf (rackcdn.com)

Figure 7: Percentage of our corporate AUM in relevant sectors covered by the CDP, Forest 500 and SPOTT data



Sources: BNPP AM based on CDP Forest, Forest 500 and SPOTT

Coverage

We prioritise three GICS sectors for this analysis, namely **consumer staples, consumer discretionary and financials (hereafter, 'relevant sectors'),** representing 48% of our corporate AUM. Within this, we have data from CDP, Forest 500 and SPOTT for 75% of our AUM in the consumer staples sector, 70% in the consumer discretionary sector and 44% in the financial sector (Figure 7).

Transparency

Just over half of these assets are invested in 480 companies that are most likely to produce or source agricultural commodities related to deforestation according to CDP, SPOTT and Forest 500 (palm oil, soy, paper, timber, beef products, rubber).

In total, out of our corporate AUM in relevant sectors:

- 4% is invested in companies with full reporting
- 22% is invested in companies with average reporting
- 26% is invested in companies with weak reporting
- the remaining **48% is invested in companies for which data is not available from CDP, Forest 500 or SPOTT**.

See Appendix 2 for our scoring system.

> *"As investors, we need more spatial data to evaluate the actual performance of our investments against our no deforestation goals. Policy-based indicators are only the beginning of the story. This is why we are continuing to explore ways of quantifying the land occupation and deforestation footprint of our investments."*

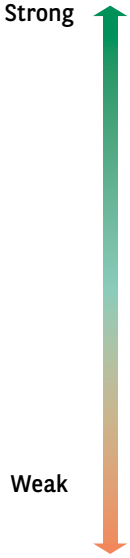
Robert-Alexandre Poujade, ESG Analyst, BNP Paribas Asset Management

Strength of the forest policy, commitments and traceability

As explained above, we combine the CDP Forest, Forest 500 and SPOTT datasets to maximise the coverage of our analysis and make use of the most recent aggregated data available[23]. To classify policies & commitments and traceability systems, we created three categories (strong, average, weak) to reconcile the sometimes differing scope of the three datasets used (see Appendix 2 for the full scoring system).

Figure 8: Percentage of our corporate AUM invested in companies covered by CDP, Forest 500 and SPOTT with strong, average and weak policies & commitments, and traceability, in relevant sectors (excluding companies for which no data is available).

	Policies & commitments			Traceability		
GICS sector	**Strong**	**Average**	**Weak**	**Strong**	**Average**	**Weak**
Financials	0%	80%	20%	20%	35%	45%
Consumer staples	25%	45%	30%	5%	90%	5%
Consumer discretionary	<5%	15%	85%	<5%	80%	20%
Total corporate AUM in relevant sectors covered by CDP, Forest 500 and SPOTT	5%	65%	30%	15%	50%	35%



Companies that have company-wide and commodity-specific commitments/policies that cover all countries, all operations, direct and indirect suppliers, all transactions (for financial services companies).

Companies that do not have a company-wide commitment/ policy and/or do not have any commodity-specific commitments/ policies.

Companies that monitor and verify compliance with their no-deforestation commitment in their supply chains and have a commitment to develop/have supply chain traceability systems on all commodities and on all operations, countries, and product and business lines.

Companies that do not have a traceability commitment for any commodity produced or sourced, do not have a traceability system in place and do not plan to put one in place within the next two years, and do not have a clear public process to identify and address issues of non-compliance with their policy.

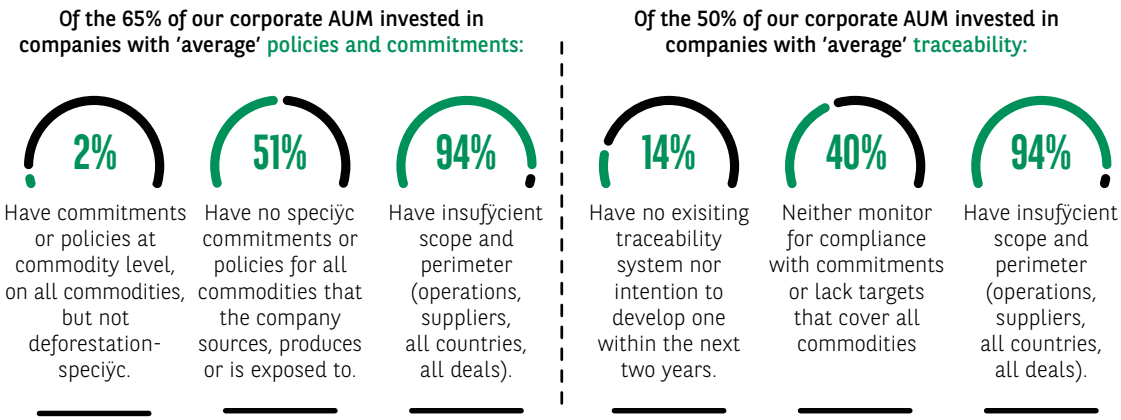
A large proportion of reporting companies do not satisfy sufficient criteria to earn a 'strong' rating:

- 65% of our AUM in relevant sectors is invested in companies with only an 'average' grade on policies and commitments
- 50% of our AUM in relevant sectors is invested in companies with only 'average' traceability
- More than 30% of our AUM in relevant sectors is invested in companies with a 'weak' policy or no policy at all.

Indeed, **most of the policies, commitments and traceability systems fail to cover all operations, geographies, business units, product lines and suppliers**. Figure 9 below is a deep-dive into the 'average' grades, to understand what drives the results and how corporates could improve to be considered 'strong' in these areas.

23 There will always be a lag given the reporting lag at the corporate level, the compilation lag in those datasets, and the aggregation and reporting lag at the investor level.

Figure 9: Percentage of our corporate AUM in relevant sectors covered by CDP, Forest 500 and SPOTT with an average grade and that fulfil the following characteristics



Sources: BNPP AM based on CDP Forest, Forest 500 and SPOTT

Towards performance-based indicators

Our forest indicators focus on the policies and processes put in place by our investees, rather than quantitative indicators, due to the lack of reported performance-based data on land and deforestation.

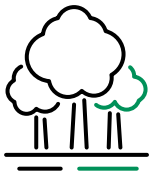
We have been investigating ways of quantifying the land occupation and deforestation footprint of our investments. For example, we experimented with Exiobase 3x, which uses environmentally extended input-output models that describe the complex relationships between sectors and countries and their environmental consequences. According to these models, on average, our corporate holdings have a land footprint from agricultural commodities of approximately 30 hectares per EUR million of net sales, 99% of which is in their supply chains. Sectors with the largest land footprint from the production and use of agricultural commodities include consumer staples and materials.

While this figure gives a sense of the overall magnitude of our exposure to this theme, it is highly uncertain as it is based on a macroeconomic top-down model, rather than company-reported data. As we work to improve our metrics and measures, we will investigate how to cover a larger number of sectors (e.g. mining), incorporate more company-specific data in our model, and focus further on the development of a 'land deforested' metric.

Sovereigns

Finally, we find that nearly 70% of our sovereign AUM is invested in countries that have endorsed the 2014 New York Declaration on Forests (NYDF)[24]. Yet, as the five-year assessment report of the NYDF demonstrated, commitments do not mean progress, and the world has failed to meet the NYDF's 2020 targets. **On average, the overall forest area of the countries in which we are invested has been increasing, contrary to the world's average**[25]. Yet, this figure may hide large discrepancies between planted and natural forests, and does not mean that our investments did not contribute to total natural forest loss (see Figure 10).

Figure 10: The top 30 countries in which BNPP AM is invested collectively contributed to...



12 MILLION HECTARES
of natural forest loss in 2019, the equivalent of 1/5th of mainland France

13 MILLION HECTARES
of humid tropical forest loss between 2015 and 2019 and

28 MILLION HECTARES
of forests lost to wildfires between 2015 and 2019, the equivalent of half of France's territory.

Our work in the area of natural capital and biodiversity strengthens our ability to respond to increasingly rigorous sustainable finance disclosure requirements from European regulators.

First, our sector analysts' expertise, desk-based research and dialogue with companies, together with our internal and external exploratory work, will help us to report on the mandatory and optional principal adverse impact indicators required by the Sustainable Finance Disclosure Regulation on the themes of water and biodiversity. In addition, our current water, forest and biodiversity footprinting work can directly feed into our reporting on four optional indicators[26].

Second, Article 29 of the French Law Energy-Climate requires investors to report on their alignment strategy with long-term biodiversity objectives as defined in the Convention for Biological Diversity, their contribution to the reduction of the main pressures and impacts on biodiversity as defined by IPBES, and their use of a biodiversity footprint indicator. The biodiversity footprinting work that we started with Iceberg Data Lab will help us achieve this.

Finally, we expect that our work may be useful when the EU Taxonomy for sustainable activities is established on the four other environmental objectives at the end of 2021, including objectives 3 and 6: The sustainable use and protection of water and marine resources, and the protection and restoration of biodiversity and ecosystems, respectively.

24 Halve the loss of natural forests globally by 2020 and end natural forest loss in 2030; global, non-legally binding political declaration. The associated voluntary action agenda gives guidelines to achieve these goals

25 Calculating the weighted forest area annual net change rate based on UNSTAT data on the UN SDGs, itself based on the UN FAO Forest Resource Assessment 2020. 'Forests' encompass both natural and planted forests, as per SDG Indicator 15.2.1.

26 Water usage and recycling; Exposure to areas of high water stress; Land degradation, desertification, soil sealing; Investments in companies without sustainable land/agriculture practices

2. STEWARDSHIP

Our objectives:

- Engage the highest impact industries seeking to reduce their impact on biodiversity, with a core focus on deforestation and water issues
- Seek to address biodiversity governance and risk management, and responsible lobbying on biodiversity
- Continue to work to build a collaborative investor stewardship initiative to address biodiversity loss
- Continue to incorporate biodiversity considerations into our public policy advocacy.

Corporate engagement

Our initial water and forest footprint exercises have revealed a substantial lack of data, which may present obstacles to informed investment decision-making to address biodiversity loss. An absence of data, however, is no obstacle to effective stewardship.

Our global corporate engagement efforts are organised around the 3Es outlined in our Global Sustainability Strategy (the **energy transition** to a low carbon economy, **environmental sustainability** and **equality and inclusive growth**), as well as our focus on corporate governance and responsible business conduct. The biodiversity crisis touches on each of these.

Our footprinting analyses, including our work with the ENCORE tools, will help us prioritise our engagements, organised around the key drivers of biodiversity loss identified by the IPBES.

We will continue to bring a sense of urgency to all of our dialogues on climate and biodiversity. For example, we have been encouraging companies that have committed to achieve net-zero greenhouse gas (GHG) emissions by 2050 to consider investments in habitat restoration and afforestation today, rather than focusing exclusively on technical solutions that may not be implemented for decades.

We will also work with our portfolio managers to integrate corporate engagement into key funds that express an environmental theme or that are invested in companies with particularly significant impacts on nature. As noted below, we are developing a corporate engagement strategy for our Blue Economy ETF, focused on reducing impacts to marine habitats.

Below are several key initiatives that will form the core of our corporate engagements on biodiversity.

Investor expectations concerning biodiversity

Corporations have had environmental policies and programmes for decades, but nature loss is accelerating, driven, in part, by a variety of commercial activities. Clearly, something new is needed.

We will work to develop investor expectations of corporates to address biodiversity loss, in collaboration with other investors. The key elements will vary by industry, but, as a baseline approach for virtually every large company, we would expect the following:

- **Board oversight:** The board of directors must have clear oversight of their company's dependencies and impacts on nature loss. We will look for boards to include biodiversity on the board agenda, either by creating new committees or by amending existing committee charters to include biodiversity, and will be seeking an understanding of board expertise in this area and details of how the board exercises its oversight responsibilities.

- **Impact assessment:** Companies must develop a deep understanding of how nature loss impacts the company in the short, medium and long term, and how the company is contributing to biodiversity loss. This analysis should be overseen by the board, be transparent, and be updated at least annually.

- **Upgrade climate commitments to address nature loss:** Corporate climate commitments should be reviewed against the emerging science regarding nature loss, and upgraded where appropriate, to reflect the appropriate sense of urgency, scale and place. This latter category is the key distinction – GHG concentrations are global, but biodiversity is always local. Companies that have made 'net-zero' commitments should consider investing in nature-based solutions as soon as possible. Where appropriate, these policies should address how the company evaluates climate and biodiversity 'offsets', in alignment with IUCN's Biodiversity Offsets Policy.

- **Set science-based targets for nature:** Companies will need to develop policies and procedures to address biodiversity loss, with clear and ambitious science-based goals. We recommend that companies use the Accountability Framework Initiative (for forests) and participate in the development of the Science Based Targets Network framework.

- **Sustainable capital allocation:** Boards should include considerations of ecosystem resilience in their oversight of corporate capital allocation decisions, including executive compensation, research and development, etc.

- **Lobbying for nature:** Companies should align their direct and indirect lobbying efforts with an ambitious outcome for the upcoming meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15), and ensure their lobbying is consistent with the preservation of nature. We will be looking to adapt the Investor Expectations on Corporate Climate Lobbying to biodiversity loss.

- **Disclosure:** The Taskforce for Nature-related Financial Disclosures has only just begun its work. Ultimately, we expect that the TNFD will provide the default corporate reporting framework for nature loss. In the meantime, we expect companies to provide thorough responses to the annual CDP survey on climate, forests and water, use the Accountability Framework Initiative reporting guidance for forests, and include a discussion of their response to the biodiversity crisis in their regular sustainability reporting.

Deforestation

BNP Paribas Asset Management has been an active member of the PRI/Ceres-led Investor Initiative for Sustainable Forests for several years, and has taken the lead with a number of companies. Through this initiative, we have been engaging key companies on their policies and procedures for sourcing commodities linked to deforestation, including soy, palm oil, cattle and timber products.[27]

Our most recent focus has been the elimination of deforestation in the Amazon and Cerrado regions of Brazil. We are engaging the major Brazilian meatpackers and are now expanding our discussions to the commodity traders, seeking full traceability of supply chains and cut-off dates for any further deforestation.

Systemic pesticides

Deforestation and water scarcity are only two of the more significant drivers of biodiversity loss. Systemic pesticides, particularly neonicotinoids, have been associated with alarming declines in pollinators, including insects and birds, for years. In 2020, we helped to organise a meeting with PepsiCo, Inc., a group of investors, and two leading scientists, to discuss the global impact of these pesticides. Our dialogue can now proceed based on a common understanding of the current state of the science. Early indications are that our meeting had an impact, and has helped to shift the company's view on these ubiquitous pesticides. For example, our meeting prompted PepsiCo to create a Neonics Workgroup within its Global Pesticide Council, a cross-functional group comprised of senior leaders from across the company that monitors and evaluates pesticide issues and directs PepsiCo's policies and programmes.

We are helping to develop a collaborative investor engagement on biodiversity

Collaborative engagement is particularly well suited to addressing systemic risks. While there is a broad range of long-term collaborative investor engagements focused on elements of the biodiversity crisis, including climate change, deforestation, plastics, chemicals, etc., there is no single collaborative engagement focused explicitly on biodiversity. Biodiversity seems to be falling through the cracks. We also believe it is particularly important to ensure that each of these initiatives incorporate biodiversity considerations to ensure that they do not inadvertently undermine progress.

27 Although this joint PRI/Ceres initiative is ending, we have been in close contact with both organizations about the framing of this work going forward, strongly emphasizing the need to broaden this work to address biodiversity loss.

During Climate Week in 2019, we co-hosted a discussion with scientists and investors to begin a discussion about what investors should be doing to address this crisis. Is a new initiative needed? What would it mean to bring a biodiversity lens to our existing engagements? How can we be optimally effective? We have continued that discussion with PRI, Ceres and other institutional investors, and recently chaired the first call for a PRI-coordinated informal working group on biodiversity. We are also serving on the biodiversity advisory committee of a new Ceres Working Group on Land Use and Climate launched partly in response to our advocacy for a biodiversity-focused engagement programme.

In 2020, we also contributed to a Ceres Investor Guide to Deforestation and Climate Change, a PRI discussion paper, Investor Action on Biodiversity, and the PRI's Investor Expectations for the Aviation Sector, developed for Climate Action 100+. In our comments, we highlighted the need to consider biodiversity impacts when evaluating sustainable aviation fuels.

Proxy voting

We will continue our record of strong support for sustainability-focused shareholder proposals and will consider submitting our own, focused on the biodiversity crisis. In 2020, we supported 94% of shareholder proposals focused on climate change and other critical environmental issues, within our voting scope.

Public policy

Without a global policy framework that sets the right level of ambition with clear targets, we are unlikely to be able to reverse nature loss. In late 2021, governments will be meeting under the auspices of the Convention on Biological Diversity (the 15th Conference of the Parties (COP15)), to negotiate a post-2020 Global Biodiversity Framework.

Scientists are warning that an outcome-oriented approach with 'multiple, coordinated goals and holistic actions are critical' for success: "We highlight the need for the connectedness, partial dependence, and imperfect nesting of nature's facets to be built right from the start in the design of outcome goals, targets, indicators, and actions. In addition to addressing different facets of nature, goals must be set across the whole gradient from 'natural' to 'managed' ecosystems, attending to the specificities of these different landscapes."[28]

More than 100 businesses, under the banner of Business for Nature, have issued a detailed call for a framework that 'accelerates collective leadership on nature and shows that the transition to a nature-positive future is both necessary and achievable'.[29]

The framework must also include the active participation of Global South countries and indigenous peoples, with a firm commitment to a 'just transition'. Wealthy nations must be prepared to compensate developing countries for land that must be set aside for nature.

We plan to work with other institutional investors ahead of the COP15 talks, to express our interest in an ambitious outcome for these critical negotiations.

> *"One of the things that is often missing from investor-corporate dialogues on environmental issues is a sense of urgency. We will always look to work with companies, and to encourage progress over time, but we must stress that we are in crisis. Business as usual is not good enough. Pilot projects and vague aspirational commitments are not good enough. We know this is difficult and we won't have all the answers, but transformation is not optional."*
>
> **Adam Kanzer**, Head of Stewardship, Americas, BNP Paribas Asset Management

28 Diaz, S., et al., Set ambitious goals for biodiversity and sustainability, Science (23 Oct. 2020), Vol. 370 Issue 6515, 411-413, available at: https://science.sciencemag.org/content/370/6515/411
29 https://www.businessfornature.org/news/business-for-nature-cbd-position

3. RESPONSIBLE BUSINESS CONDUCT

- On an ongoing basis, enhance the assessment of biodiversity issues in our approach to responsible business conduct

We believe we have a constructive role to play to help companies transition their business models onto a more sustainable path. But we do also exclude companies from our actively managed portfolios where we believe the company's behaviour or business model poses unacceptably high risks to investors, society or the environment. A key challenge in implementing this commitment is the lack of widely available information on corporate social and environmental impacts. Our exclusions are therefore necessarily under-inclusive.

Company and industry exclusions are one of the oldest – and least understood – elements of responsible investment. Some argue that divestment is the only answer, while others argue that it is only a form of 'passing the buck' to another investor. Although we reserve these exclusions as a last resort, we do believe they are important, as they:

- Uphold international norms as standards for corporate behaviour and incentivise compliance with them, identifying lines that must not be crossed;
- Protect our portfolios from a wide variety of risks stemming from corruption, human rights violations and environmental degradation, and
- Help to ensure that we are not prioritising short-term profits over longer-term harm.

This last point is perhaps the least well understood aspect of industry and company exclusions. Former Bank of England Governor Mark Carney spoke of the 'tragedy of the horizon' and the Dasgupta review also cited the critical mismatch between investor time horizons and the timescale for significant environmental harm. This mismatch means that capital continues to be deployed to companies and activities that produce short-term gains, but significant long-term damage. At least three tools can help to address this problem: Regulation, fiduciary duty and 'norms-based' industry and company exclusions.

In addition to detailed sectoral policies that are applied to the BNP Paribas Group and BNP Paribas Asset Management, we also use international normative frameworks, such as the UN Global Compact, to evaluate and potentially exclude the worst actors. This evaluation has historically included a number of biodiversity considerations, including forestry standards related to palm oil production, our coal exclusions, and a range of exclusions based on corruption scandals. Corruption does not explicitly relate to biodiversity, but there is widespread evidence that forestry operations have been used to launder money from illegal activities, and INTERPOL has highlighted the tragic fact that 'the vast majority of the world's biodiversity hotspots are … located in countries where overall levels of corruption are perceived to be at least moderate to high'.[30]

Most recently, the BNP Paribas Group amended its Agricultural Sector policy to tighten restrictions on deforestation and land clearance in the Amazon and Cerrado regions of Brazil – two of the most biodiverse regions on Earth. BNP Paribas Group also released its position on biodiversity preservation in May 2021. Our own work at BNP Paribas Asset Management builds on this.

BNP Paribas Group's financing and investment policies related to biodiversity

As a large international financial services provider, BNP Paribas finances a number of industries, some of which present significant sustainability challenges. For these sectors, we have developed a suite of policies which take into account sustainability standards, in addition to economic performance criteria, when making financing and investment decisions. Developed in cooperation with independent experts, these public policies apply to all of the Group's business lines and countries where it has a presence. In 2019, the Corporate Social Responsibility branch of BNP Paribas reviewed 2 340 transactions to ensure their compliance with these policies. Sector-specific policies that have biodiversity aspects include agriculture, mining, palm oil, unconventional oil & gas and wood pulp.

30 https://globaltimbertrackingnetwork.org/wp-content/uploads/2017/12/INTERPOL_2016_Uncovering-the-Risks-of-Corruption-in-the-Forestry-Sector.pdf

BNP Paribas Group's position on biodiversity preservation

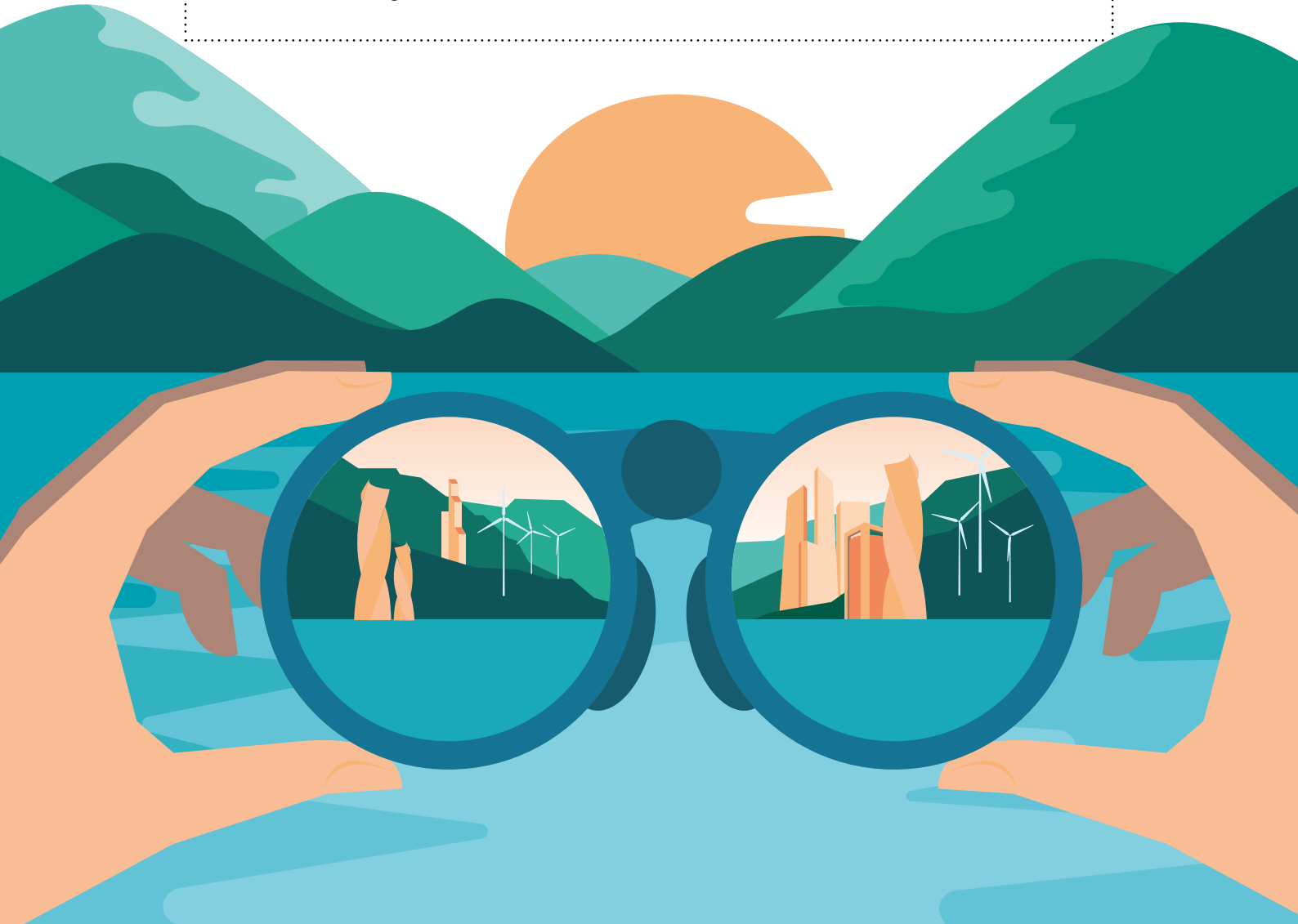
BNP Paribas is convinced that biodiversity-related risks and opportunities are significant and has been committed to preserving biodiversity for several years: inclusion of criteria relating to deforestation and biodiversity in its financing and investment policies since 2012, dialogue with customers in the most sensitive sectors, development of product and service relying on nature-based solutions (NBS), act4nature commitments in 2018 (updated in 2021), publication of a position on ocean protection in 2019, extension to biodiversity of research programs supported by the BNP Paribas Foundation in 2019, etc. BNP Paribas wants to continue this momentum and accelerate its actions in favour of biodiversity.

To structure these actions and understand their impacts, the Group relies on the pressures on biodiversity listed by IPBES in its 2019 report, and mainly the first four: changes in land and sea use, direct exploitation of organisms, climate change and pollution. This assessment framework makes it possible to rely on concrete and diversified indicators, reflecting the multiplicity of challenges in preserving biodiversity.

BNP Paribas implements various levers of action to integrate the preservation of biodiversity at the heart of its businesses:

- reduction of pressures related to the activity of its customers and companies in which the Group invests, through **constructive dialogue and supervision of our credit and investment activities**
- active support to our clients' efforts to preserve biodiversity, through **specific financial products and services** (SLL, green bonds, etc.)
- **orientation of investments** towards funds aiming at preserving biodiversity
- reduction of the Group's **direct impacts** on biodiversity.

In addition, the Group is deploying transversal actions, in particular to improve knowledge of impacts on biodiversity and monitoring tools: supporting R&D, targeted partnerships, raising awareness among internal and external stakeholders.



4. FOCUS ON THE FUTURE

We believe a better world is one whose economic model is underpinned by a successful energy transition, more environmentally sustainable and more equitable and inclusive. These '3Es' serve as the focus for our global sustainability efforts. We also believe that institutional investors – including both asset managers and asset owners – have the opportunity, indeed the obligation, to take action to help achieve the UN's Sustainable Development Goals and the Paris Agreement. With respect to biodiversity, we see ourselves playing a role in helping make meaningful data available to the investment community and using our leverage as a large investor to encourage stakeholders to act on issues of biodiversity.

Collaborating to improve the availability and usability of investment-relevant data

Corporate biodiversity footprints

One of the many consequences of water overconsumption, and more importantly deforestation and unsustainable land management, is biodiversity loss. Biodiversity loss may, in turn, affect societies, economies and ultimately investors. This is why we need to complement our water and deforestation work with additional data to get a full picture of our exposure, and impact, on global biodiversity loss.

Despite our efforts to combine available data sources, however, significant gaps remain. There is a pressing need both for raw data from companies and tools to help integrate this data into our investment decisions. The markets also need a consistent framework for understanding and reporting the full range of risks presented by biodiversity loss.

Since 2018, we have been exploring the development of a biodiversity footprint for portfolios. We also contributed to the measurement section of the Biodiversity Guidance of the Natural Capital protocol and we will continue to be involved in biodiversity target setting with UNEP FI and other organisations. Open-source tools such as TRASE.Finance and frameworks such as the IPBES direct drivers of change in nature will play critical roles in shaping how we report our nature-related impacts.

In March 2020, working with AXA Investment Managers, Sycomore Asset Management and Mirova, an affiliate of Natixis Investment Managers, we embarked on a global competitive search for a research firm that could provide a tool to allow investors to measure how their investments impact biodiversity. We ultimately selected Iceberg Data Lab and I Care & Consult at the end of a structured, highly competitive tender process initiated by a Call for Expression of Interest (CEI). The process was guided by a set of principles for the development of research tools, and we are grateful for support from nature-related experts at Global Canopy, WWF, ZSL, CDC Biodiversité, UNEP WCMC, and Capitals Coalition, to name only a few key partners that provided input to the initiative.

In response to our request, Iceberg Data Lab and I Care & Consult have joined forces to expand the Corporate Biodiversity Footprint metric, which quantifies a company's impact on biodiversity, across its activities. The expanded tool will help investors integrate impacts on nature and biodiversity into their risk assessments and research. In addition, the transparency of their approach should encourage convergence towards more standard and comparable metrics. Our hope is that this will serve as an important catalyst for private sector action, with ripple effects throughout our economies.

As noted below, we further supported this effort with an Investor statement on the need for biodiversity impact metrics to communicate that there is currently a large and unmet demand for these tools.

Helping to expand CDP's mandate

CDP is a key provider of sustainability data to investors. Its comprehensive surveys addressing climate change, forests, water, corporate supply chains and cities are supported by investors cumulatively managing USD 110 trillion of assets. Our global head of sustainability is a trustee of the CDP.

We are funding a project to help CDP develop common biodiversity metrics, ensuring the relevance and usefulness of biodiversity corporate reporting to both financial institutions and policymakers. This comes at an opportune time as CDP works toward a single integrated corporate environmental impact disclosure questionnaire. This project could help move the needle by establishing a new norm for reporting on biodiversity to enable the integration of CDP biodiversity data into investment decision-making globally.

The Taskforce for Nature-Related Financial Disclosures (TNFD)

BNP Paribas Group is helping to develop a Taskforce for Nature-Related Financial Disclosures – a global effort to define a reporting framework to allow the capital markets to identify, measure and reduce its various impacts to biodiversity.

In September 2020, an international financial sector-led informal working group (IWG) was established to plan a Taskforce on Nature-related Financial Disclosures (TNFD). The IWG comprises representatives from financial institutions, corporates, regulators, NGOs and governments, brought together for a six-month period to define the scope and operating model of a TNFD and launch it in 2021. BNP Paribas is currently co-chairing the IWG, with active support from BNP Paribas Asset Management.

The TNFD, once launched, will develop a framework for organisations (including non-financial companies and financial institutions) to report on their impacts and dependencies on nature, and support them in identifying, assessing and managing these impacts and dependencies. The framework will address both how nature may impact the organisation, and how the organisation impacts nature. This will aid in the appraisal of nature-related financial risks and opportunities, both at the organisation and system-wide level, and potentially influence decision making in the redirection of global financial flows away from nature-negative outcomes and towards nature-positive outcomes.

This framework will serve as a mechanism to facilitate disclosure and help organisations understand and manage the financial risks and opportunities associated with the deteriorating state of nature and a transition to an economy consistent with meeting future nature-related international agreements. These include, among others, the UN Convention on Biological Diversity (CBD) and the ambitions set out in its forthcoming Post-2020 Global Biodiversity Framework. The need to align with and draw upon existing initiatives, frameworks and standards and not duplicate existing work will be central to the TNFD's approach.

Raising awareness through leading-edge investor statements related to biodiversity

In 2020, after publishing our joint request for a biodiversity data provider (see above), we worked with our colleagues at Axa, Mirova and Sycomore to issue an Investor statement on the need for biodiversity impact metrics, which gathered more than 30 signatures from leading institutional investors around the world, representing over EUR 6 trillion in assets under management. The statement demonstrates that there is currently an unmet demand for quality research to assist investors in responding to the biodiversity crisis.

> *"The Earth's biosphere is a common good, providing a vast array of ecosystem services to all forms of life. It is the very foundation of the resilience and progress of humanity. All markets and economies function within the biosphere and are dependent upon it."*

Investor statement on the need for biodiversity impact metrics
(March 2020, excerpt), signed by more than 30 institutional investors managing more than EUR 6 trillion

In addition, in recent years, we have signed a number of other public statements relating to biodiversity loss:

- Investor Expectations on Deforestation in Cattle Supply Chains, endorsed by 45 investors representing approximately USD 6.8 trillion
- Investor Expectations on Deforestation in Soybean Supply Chains, endorsed by 57 investors representing approximately USD 6.3 trillion
- Investor Statement on Deforestation and Forest Fires in the Amazon, endorsed by 230 investors representing approximately USD 16.2 trillion
- Cerrado Manifesto Statement of Support, supported by 57 investor signatories, collectively representing over USD 7.8 trillion
- New Plastics Economy Global Commitment, endorsed by companies representing 20% of all plastic packaging produced globally, as well as governments, NGOs, universities, industry associations, investors, and other organisations.

5. DIRECTING CAPITAL TOWARDS SOLUTIONS

Our objective: Provide our clients with a range of solutions targeted at solving biodiversity challenges

Financial flows into global biodiversity conservation in 2019 are estimated at between USD 124 billion and USD 143 billion. However, the estimated amount needed to protect the earth's biodiversity is USD 722 billion to USD 967 billion per year, leaving a current biodiversity financing gap of between USD 600 billion and USD 800 billion annually[31].

BNP Paribas Group has been involved in providing innovative solutions to biodiversity challenges. In the past few years, BNP Paribas has launched innovative structured mechanisms that aim to preserve biodiversity, such as sustainability-linked loans that tie interest-rate reductions to biodiversity performance indicators, and blended finance solutions to promote green growth and sustainable rural livelihoods (TLFF[32], ZBNF[33], 2018).

We are also dedicated to providing our clients with strategies specifically focused on addressing the biodiversity crisis:

- A passive vehicle focusing on blue economy helps support the objectives of SDG 14, Life Below Water. Although this is a passive vehicle, we cannot remain passive in the face of the biodiversity crisis. We are therefore launching a dedicated engagement strategy whereby our Sustainability Centre will use its stewardship capabilities to engage with companies that are best placed to seize the opportunities offered by the sustainable use of ocean resources with the aim to improve their practices, track their progress and report back to our stakeholders.

- An ecosystem restoration strategy with an objective of helping to restore our oceans, lands and urban communities. The portfolio managers will identify companies across three core themes, covering around 1,000 companies globally, that are engaged in improving aquatic, terrestrial and urban ecosystems services, through their products, services or processes. This includes, but is not limited to: ocean and water pollution control, aquaculture, agricultural technology, sustainable forestry, green cities, air pollution control and waste management solutions.

- An environmental absolute return thematic equity strategy investing in companies that are providing solutions to environmental challenges through their products, services or processes broadly related to energy, materials, agriculture and industrial markets. It also shorts companies that fail to adapt their business models to the transition towards more sustainable practices. To achieve its objective, the strategy is invested globally in equities and equity-linked instruments of companies active in the sectors mentioned above through a series of long and short investment positions to generate returns that have a lower correlation to markets and sectors. The strategy's long positions are in companies providing solutions for environmental problems through innovation and disruption, with short positions in companies that will suffer from business models with transition risk and inferior technologies.

- A strategy focusing on circular economy which offers investors exposure to the performance of international large caps selected for their active participation in a business model based on the circularity of goods, materials and raw materials. It replicates the ECPI Circular Economy Leaders Equity index (Bloomberg code: GALPHCEN), whose methodology is based mainly on ESG criteria at global companies. Companies are selected for their degree of participation in the circular economy and classified according to several categories, including circular design, material recovery, extending product lifecycles, sharing platforms and the offering of products as services (including the cloud, leasing and exchange of goods).

The investments in the strategies are subject to market fluctuations and the risks inherent in investments in securities. The value of investments and the income they generate may go down as well as up and it is possible that investors will not recover their initial outlay, the strategies described being at risk of capital loss.

31 https://www.paulsoninstitute.org/wp-content/uploads/2020/10/FINANCING-NATURE_Full-Report_Final-with-endorsements_101420.pdf
32 https://www.tlffindonesia.org/project-pt-royal-lestari-utama-2020/
33 https://group.bnpparibas/en/news/bnp-paribas-joins-sustainable-project-budget-natural-farming-india

6. WALKING THE TALK

We believe that 'walking the talk' is critical to achieving excellence. As a sustainable asset manager, our corporate practices and disclosures should match or exceed the standards we expect from the entities in which we invest. Not only will this reduce our negative impacts on society; it helps build a culture that is consistent with our investment philosophy. We believe that immersing our employees in a more sustainable work environment will help them to more authentically incorporate sustainability principles into their day-to-day activities, whether that is in investments, sales or operational roles.

As a services business, our operational impacts on the environment are relatively small compared to other industries, but that does not minimise our obligation to take concrete measures to reduce this impact. We have a four-pronged approach to Corporate Social Responsibility, one of which is a long-term goal of **sending zero waste to landfill**. We plan to achieve this by reducing the amount of waste we generate and reusing or recycling what is left.

We started this initiative in 2019 by undertaking a waste audit at our headquarters in Paris, where approximately half of our workforce is located. The results of the waste audit, which show that we currently recycle 35% of our waste, provide us with an action plan and a baseline to achieve our long-term goal of diverting 100% of our waste.

Recognising that we do not operate in isolation and that we will need transformative change to realise our ambition, we established the Mission Zero Council to bring together key stakeholders to help us achieve our goal. The Council meets quarterly and includes our facilities and procurement teams, our property manager, janitorial firm, waste haulage providers, and the food services company managing the cafeteria facilities at our head office. Together, we are implementing the first year of the action plan from our waste audit.

As part of our drive to send zero waste to landfill, we are **eliminating single-use plastic** from our cafeterias and vending machines, providing our employees at certain locations with reusable water bottles and reusable lunch kits that they can use to bring their own food or food from nearby vendors (sanitary conditions allowing), and, in certain offices, we have partnered with Nespresso to have coffee pods recycled directly by them. Employees can also bring in their capsules from home to be recycled.

We are also implementing initiatives to **reduce our consumption**, including paperless challenges, which successfully reduced paper consumption at our Paris office by 23%. In 2021-22, our focus will be on sustainable IT.

Employee and community engagement

We must think beyond our products and services and bring our employees along with us if we are to achieve the impact we seek. Our CSR initiatives are underpinned by ongoing employee communications to help encourage behavioural changes – behaviours we hope our employees will also adopt in their day-to-day lives.

We have created networks of ESG Champions who act as specialists within their spheres of influence and commit to completing sustainability-related training. They now number over 150 employees globally across Investments and our Global Client Group. These champions receive ongoing specialised training, including two sessions on ways to integrate water, forest and biodiversity data into their investment decision-making. We also invited external sell-side analysts to discuss biodiversity and provide our investment teams with various views and angles. On other occasions, we have brought in leading scientists to speak to the ESG Champions and to our broader employee base.

We will be hosting an all-employee screening of biodiversity and climate-related documentaries, accompanied by roundtable discussions on the role financial institutions can play to help relieve pressures on the environment. We will also have Surfrider Foundation run workshops for our employees on how to create less waste in their personal lives. In addition to this, BNP Paribas Group hosts a number of education sessions on biodiversity issues for employees at all levels, including the Leaders for Change, a community of top leaders within the Group.

We also extend our efforts into the community by supporting important scientific research on issues related to climate and biodiversity. Since 2010, the programme has supported 27 research initiatives with a total of EUR 18 million in funding.

"Our CSR program is the part of our Global Sustainability Strategy that focuses on culture change and creating a working environment that is consistent with our investment philosophy. We believe that immersing our employees in a more sustainable work environment will help them to more authentically incorporate sustainability principles into their day-to-day activities, whether that's in investments, sales or operational roles.."

Chris Ouellette, Head of Corporate Social Responsibility, BNP Paribas Asset Management

The biodiversity-climate nexus in practice

In 2019, BNP Paribas formed an alliance with 3stepIT to help it globalise its leading approach to responsible and sustainable IT lifecycle management. 3stepIT uses circular economy principles in its approach to technology lifecycle management and finds new homes for over 97% of the equipment returned to it. The remainder, which is usually faulty or beyond repair, is responsibly recycled through ISO 14001 certified recycling partners.

"Using BNP Paribas 3stepIT in France has helped us eliminate waste associated with IT here, and in doing so, reduce our emissions and our impact on the environment."

Fatia-Fatma Balit, Deputy Head of IT, BNP Paribas Asset Management
Pierre-Yves Argoud, Head of Infrastructure and Production, BNP Paribas Asset Management

CONCLUSION

The web of life is literally coming apart, and our societies and economies are embedded within it. Like climate change, this is a manmade crisis, meaning that we have both an obligation and an opportunity to act.

We are integrating biodiversity considerations across the six pillars of our sustainability strategy. We have learned quite a bit to date about our exposure to water and deforestation risks, but also about the gaps in current corporate disclosures and the need to build better models to help investors reorient capital towards nature-positive pathways. We intend to continue to play our part to help fill these gaps and meet these challenges. The risks are great, but the opportunities are also immense.

We are building on our stewardship efforts on climate and deforestation to address water scarcity, systemic pesticides and marine habitats. Biodiversity will become a core aspect of our stewardship work globally, including proxy voting, corporate engagement and public policy advocacy.

We know that we cannot do this alone, and are grateful to the many individuals and organisations that have partnered with us to date, and with whom we will partner in the future. The biodiversity crisis presents a series of daunting challenges, but just over two years since the IPBES 'million species' report was issued, we have seen many hopeful signs of interest and activity from both investors and corporations.

Appendix 1: Our participation in biodiversity-focused initiatives

Name of initiative	Organising body	Description	Purpose of initiative	Our participation
Working Group on Land Use and Climate	Ceres	The purpose of the Working Group on Land Use and Climate (LAC) is to serve as a center of investor coordination and collaboration on climate and land use issues. The Working Group will offer peer-to-peer sharing about investment risks and opportunities, as well as best practices to integrate those risks in investment policies, strategies and engagement practices. Its broad focus is designed to allow for multiple topic areas with specific goals and objectives that will protect, improve and restore natural landscapes.	Stewardship	Biodiversity Working Group Advisory Committee member
Partnership for Biodiversity Accounting Financials (PBAF)	Coalition	The objective of the partnership is to exchange knowledge and contribute to a common approach to assessing and measuring the financial sector's impact on biodiversity.	Accounting definition	BNP Paribas Group member; we provide input
Corporate Biodiversity Footprint	Iceberg Data Lab and iCare & Consult	Participation in the governance of the CBF (joint project with AXA IM, Mirova and Sycomore).	Data tool	Steering committee
ENCORE	NCFA, UNEP WCMC	Public research tool focusing on defining to what extent corporate activities depend on ecosystem services or impact nature.	Data tool	Pilot
TRASE	Global Canopy	Public research tool focusing on supply chain data.	Data tool	Pilot
ZSL SPOTT	Zoological Society of London	Assesses timber and pulp producers, palm oil producers and crushers and rubber producers on the public disclosure of their policies, operations and commitments to environmental, social and governance (ESG) best practice.	Data tool	Technical Advisory Group member
CDP	CDP	Define key (i.e. short list of) biodiversity metrics for companies to disclose to help investors make more informed decisions.	Data tool	Funder and steering group member
PRI Plastic Investor Working Group	PRI	Focused on building an understanding of plastics from a global and holistic perspective, including how plastics fit in with the broader circular economy concept.	Gain insights / ESG research	Working group member
Cerrado Manifesto	Coalition	Aims to halt forest loss in the Cerrado associated with agricultural commodity production and work with industry, producers, governments and civil society to protect globally important natural landscapes.	Investor statement - with commitments	Signatory / commit to engagement and integrating into risk analysis
New Plastics Economy Global Commitment	Ellen MacArthur Foundation	Unite businesses, governments, and other organisations behind a common vision and targets to address plastic waste and pollution at its source.	Investor statement - with commitments	Endorser of the commitment
TNFD	Global Canopy, UNDP, WWF	Aims to develop recommendations for more effective nature-related disclosures to promote more informed investment, credit, and insurance underwriting decisions and, in turn, enable stakeholders to better understand the risks associated with the loss or degradation of nature and the financial and business system's exposures to these risks.	Reporting Framework	BNP Paribas Group co-chairs working group; we provide input

Appendix 2: Key performance indicators: Forest: Strength of policies and commitments

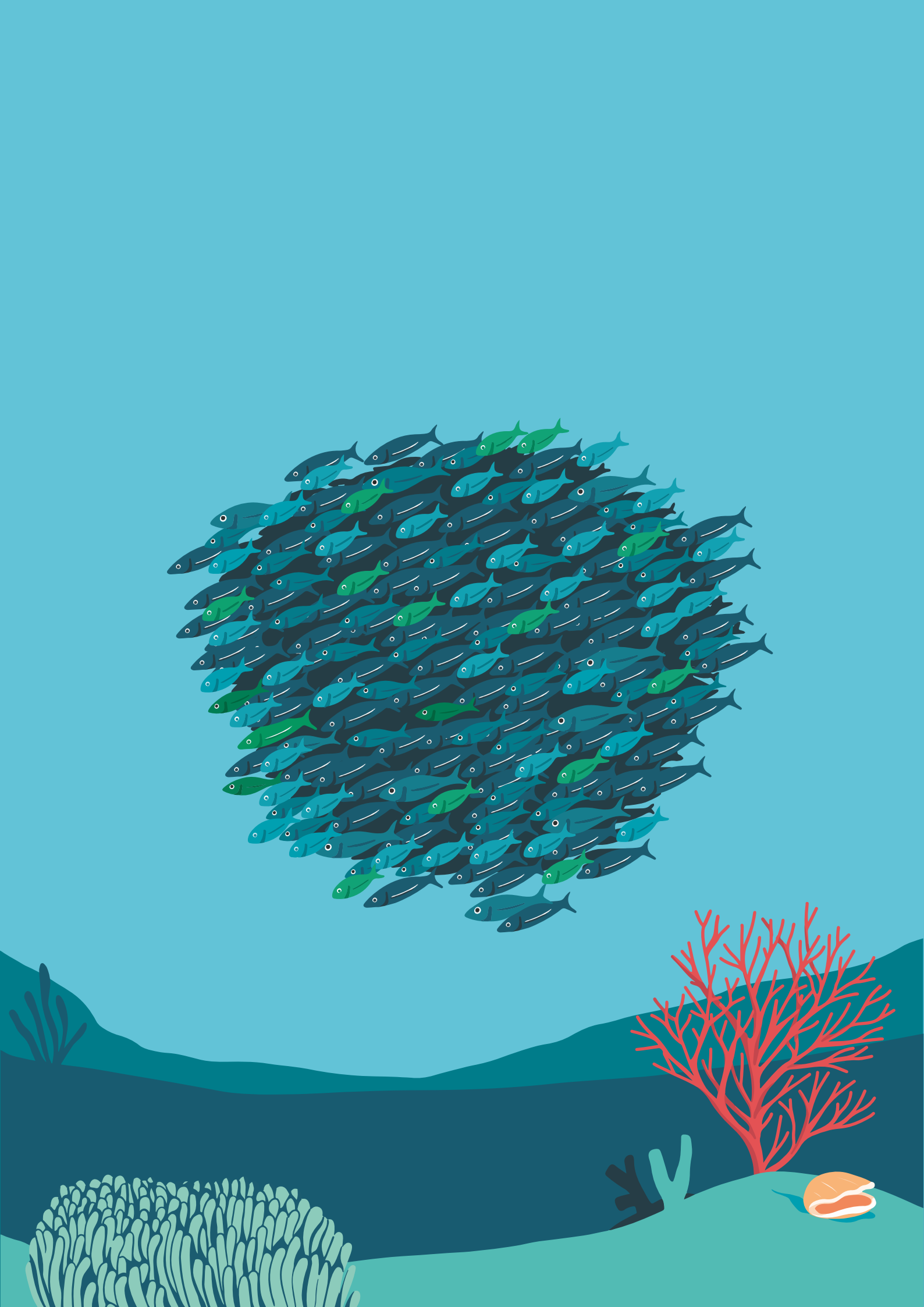
Data source	Strong	Medium	Weak
Forest 500 for companies (timber, paper, palm oil, beef, leather and soy) + SPOTT Rubber	Companies that: • Have a company-wide commitment relating to at least zero net deforestation and/or no deforestation of high-conservation value and high carbon stocks forests; and • Commodity-specific commitments (conversion free or forest-related) on all commodities to which the company is exposed (timber, paper, palm oil, beef, leather, soy and rubber) and no peat commitment if the company is exposed to palm oil; and • The commitments must cover all countries, all operations, direct and indirect suppliers.	Companies that have a company-wide commitment and commodity-specific commitments, which: • Do not cover all commodities to which the company is exposed (including rubber); • Have sustainability-commitments on specific commodities but not specifically forest-related; and/or • Do not have a no peat policy if the company is exposed to palm oil; and/or • Do not cover all countries, all operations, and all direct and indirect suppliers;	Companies that: • Do not have a company-wide commitment; and/or • Do not have any commodity-specific commitments.
CDP Forest	Companies that: • Have a company-wide policy that includes forest-related issues and that contains a commitment to eliminate deforestation, and/or the conversion of natural ecosystems, and/or to no deforestation, to no planting on peatlands and to no exploitation (NDPE); and • Same as above mentioning specifically the commodities to which it is exposed.	Companies that have a company-wide policy that includes forest-related issues, which: • Have a company-wide policy that does not mention any of the three selected commitments to be considered 'strong' on all commodities to which it is exposed.	Companies that: • Do not have a company-wide commitment; and/or • Do not disclose anything on a forest-related policy while mentioning that they are exposed to certain commodities.
Forest 500 for FI (timber, pulp & paper, palm oil, beef & catlle, and soy)	Companies that: • Have an overarching commitment to at least zero net deforestation, no deforestation and/or no conversion; and • Have commodity-specific policies or explicitly states that their overarching policy applies to specific commodity supply chains; • The policy covers all operations and financial services provided, all deals and companies regardless of size and regardless of their position in soft commodity supply chains	Companies that have a company-wide policy that includes forest-related issues, which: • Relates to reduce deforestation, a statement on deforestation/conversion showing understanding of risks, and/or signatory to the BEI's Soft Commodity Compact or another finance sector initiative on deforestation; and/or • Do not have commodity-specific policies/ statements on all commodities assessed by Forest 500; and/or • The policies do not cover all operations and financial services provided, all deals and companies regardless of size and of their position in soft commodity supply chains.	Companies that: • Do not have any overarching commitment relating to deforestation; and/or • Do not have any commodity-specific commitments or statements.

Key performance indicator: Forest: Tracing and monitoring of commodity sourcing

Data source	Strong	Medium	Weak
Forest 500 for companies (timber, paper, palm oil, beef, leather and soy) + SPOTT Rubber	Companies that: • Have a commitment to develop supply chain traceability systems on all commodities covered (including rubber with SPOTT) all the way to production levels for all companies or back to the first importer or processing facility (and a statement that they check these suppliers for compliance) for manufacturers and retailers only; and • The commitment covers all geographies, operations, direct and indirect suppliers; and • The company monitors and verifies compliance in their supply chains (including rubber with SPOTT).	Companies that: • Have a commitment to develop supply chain traceability systems on all commodities covered for retailers and manufacturers only; back first importer or processing facility without additional compliance assurances; and/or • Have a commitment to develop supply chain traceability systems on some commodities to which it is exposed only; and/or • The commitment does not cover all geographies, operations, direct or indirect suppliers; and/or • The company does not monitor or verifies compliance in their supply chain.	Companies that: • Do not have commitment to traceability on any commodity to which is is exposed.
CDP Forest	Companies that: • Have a traceability system in place to track and monitor the origin of the disclosed commodities; and • This traceability system does not exclude any product line, geography, business unit or activity; and • For each commodity, have a system to control, monitor, or verify compliance with no conversion and/ or no deforestation commitments.	Companies that: • Declare aiming to develop a traceability system to track and monitor the origin of the disclosed commodities within the next two years; or • Have a traceability system in place but not for all commodities; and/or • Have a traceability system but with some exclusions; and/or • Do not have a specific monitoring system for their no conversion and/ or no deforestation commitments.	Companies that: • Do not have a traceability system in place and do not plan to put one in place within the next two years; • Do not disclose anything on a forest-related monitoring while mentioning that they are exposed to certain commodities.
Forest 500 for FI (timber, pulp & paper, palm oil, beef & catlle, and soy)	Companies that : • Have a clear public process to identify and deal with policy non-compliance that includes either a screening & monitoring process or a time-bound non-compliance statement.	Companies that: • Have a clear public process to identify and deal with policy non-compliance that includes a general non-compliance statement.	Companies that: • Do not have a clear public process to identify and deal with policy non-compliance.

Key performance indicator: Forest: Reporting on progress and transparency

Data source	Strong	Medium	Weak
Forest 500 for companies (timber, paper, palm oil, beef, leather and soy)	Companies that : • Report on its own website for at least 2 years or at least once within the past two years via an external portal, such as RSPO, RTRS or CDP, on all commodities covered.	Companies that : • Report on its own website for at least 2 years or at least once within the past two years via an external portal, such as RSPO, RTRS or CDP, on some but not all commodities covered.	Companies that : • Do not report on any commodity on its own website for at least 2 years or at least once within the past two years via an external portal, such as RSPO, RTRS or CDP.
CDP Forest	Companies that: • Report to CDP Forest on all commodities (regardless of the quality of the response).	Companies that: • Report to CDP Forest on some commodities (regardless of the quality of the response).	Companies that: • Have been invited to report to CDP Forest but did not respond in 2020.
Forest 500 for FI (timber, pulp & paper, palm oil, beef & cattle, and soy)	Companies that: • Report the number or proportion of portfolio companies compliant with their time-bound plans or the number or proportion of companies in compliance with the financial institution's policy, at least annually.	Companies that: • Report the number or proportion of portfolio companies compliant with their time-bound plans or the number or proportion of companies in compliance with the financial institution's policy, less than annually.	Companies that: • Do not report the number or proportion of portfolio companies compliant with their time-bound plans or the number or proportion of companies in compliance with the financial institution's policy.



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