Biodiversity: The neglected existential risk

Biodiversity will become one of the largest investment megatrends in our lives, and the theme is at an inflection point

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Fidelity INTERNATIONAL

Executive summary

Biodiversity: The neglected existential risk

Much of the investment industry's rhetoric is about capital - whether that's financial, produced, human or social. But we have long neglected the other crucial resource: natural capital.

In the past, participants in the global economy have taken nature for granted, viewing it as a perpetual resource. But evidence emphatically shows that nature is degrading fast as a result of human activity.

While investors, companies and policymakers have in recent years focussed on climate change and its devastating effects on the world, they are also growing more aware of our impact and dependence on nature and the existential risk that biodiversity loss poses to us.

The financial materiality of biodiversity loss across sectors is clear. Compromised ecosystems threaten systemic risks to industry and the economy, whether that's through downward valuation adjustments to vulnerable or stranded assets, the failure of previously reliable ecosystem services that are essential to certain industries, or impaired operations due to physical risks.

To be clear, climate change and biodiversity are interconnected. Biodiversity is affected by climate change, while biodiversity, and the ecosystem services it provides, is integral to climate-change mitigation and adaptation. However, biodiversity loss, while also a major threat to humanity, is far broader in its causes and more complex in measuring how economic players contribute to its deterioration.

As policymakers introduce new frameworks for biodiversity, companies and investors will have to adjust. Reporting and disclosure requirements, and regulations around biodiversity will become increasingly stringent, and investors and asset allocators will have to rethink how they evaluate companies and construct portfolios.

Biodiversity is emerging as one of the largest investment megatrends for our generation, and it is an enormous opportunity for investors. The theme is at an inflection point as it transforms from a neglected risk into a top priority.

Velislava Dimitrova
Sustainability portfolio manager

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Introduction

Biodiversity is the Earth's balance and variety of plant and animal species, fungi and microorganisms, the genetic diversity within these species and their interconnections. It measures variation at the genetic, species, and ecosystem level, and is of existential importance to human survival.

Human activity is causing rapid change to the delicate balance of ecosystems, and this is already having a devastating effect on the planet. With at least a half of the world's economy derived from biological resources, if we do not take strong measures now to protect our biodiversity, we will face greater harm in the future. Our very survival depends on biodiversity.

> **"By threatening biodiversity, humanity is threatening the conditions for its own survival."**
>
> Audrey Azoulay,
> Director-General of UNESCO

According to the World Economic Forum global risks perceptions survey, biodiversity loss is a top three critical risk over the next five to ten years (climate action failure and extreme weather are the others). The WEF estimates that protecting biodiversity in food and agriculture alone could unlock US$4.5 trillion per year in new business opportunities by 2030.

Despite posing significant threats to society, economies and business, biodiversity loss has garnered less attention from investors and policymakers than other sustainability issues such as climate change, but both are critically important to our life.

While biodiversity loss has been relatively neglected by investors, policymakers and society, stakeholders are slowly waking up. Governments around the world are developing policies to address biodiversity loss. The UN Biodiversity Conference scheduled for December 2022 will agree goals to ensure the shared vision of living in harmony with nature is fulfilled by 2050.

The investment required to prevent further biodiversity degradation is staggering, measuring in the trillions of dollars. However, current spending is just US$133 billion or 0.1% of global GDP. Fighting biodiversity also needs to be a consistent, long-term plan over the next three decades.

As the investment industry adjusts to the physical risks arising from the loss of biodiversity, it is beginning to reassess the value of potentially vulnerable or stranded assets and make downward adjustments to their valuations, or even view them as liabilities. We expect biodiversity-related risks to become increasingly prominent in investment decision making. At the simplest level, asset allocation decisions may revolve around supply-chain mapping for sectors that are particularly exposed to natural resources and ecosystems.

Biodiversity loss is a multi-faceted problem with many different underlying causes. Fortunately, we have tools to slow and even stop the loss of biodiversity, and some of those tools are now seeing an acceleration in their adoption. We believe that the solutions to biodiversity loss are an emerging megatrend, which might prove to be the largest investment opportunity in our lifetime.

Given the secular nature of the theme and its potential growth in market penetration, it is underpinned by sustainable growth drivers measured in years and decades. As a result, investing in biodiversity can generate long-term, sustainable alpha as well as help to preserve our ecosystems.

Section 1: What is biodiversity?

What is biodiversity?

Biodiversity is the Earth's balance and variety of plant and animal species, fungi and microorganisms, the genetic diversity within these species and their interconnections. It measures variation at the genetic, species, and ecosystem level, and is of existential importance to human survival.

Biodiversity is all around us, from the health of bees in our gardens to the quality and variety of grains we buy in shops to the cleanliness of water that we drink. It encompasses a range of ecosystems including urban life, forest environments and marine biodiversity.

The 'ecosystem services' that biodiversity provides support food production and water purity, raw materials, regulate climate patterns, contribute to blocking pollution and inspire medicines - half of all modern drugs are developed from natural products. Biodiversity enables pollination, plant growth, flood protection and carbon sequestration. In short, we rely on biodiversity for our very survival.

Natural capital is a term related to biodiversity but separate. While biodiversity is the variety of species, natural capital is the total stock of renewable and non-renewable natural resources. This inventory of natural resources provides humanity with a flow of services. Natural capital encompasses forests, rivers, air, soil, minerals, animals and plants. It includes living (plants and animals) and non-living (air, water and nutrients) building blocks of ecosystems.

Natural capital acts a framework for understanding the multiple benefits and inter-dependencies between nature, people, the economy and society. It provides flows of environmental services, such as food, water, pollination, nutrient cycling, and water filtration. These services provide a market value (food, minerals, timber and freshwater) or non-market value (outdoor recreation, landscape amenity).

Biodiversity is the variety of living natural capital and the diversity in ecosystems

Source: Fidelity International, April 2022. For illustration purposes only

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The World Economic Forum estimates that over half of global GDP is nature-dependant, but this is likely to be too conservative. WEF calculates that around US$44 trillion is generated in nature dependent industries (construction, agriculture, and tourism), but other industries while not directly linked to nature are likely to be indirectly affected by biodiversity loss because of the fine balance of natural ecosystems that we depend on.

Biodiversity and ecosystem benefits

Biodiversity has a number of critical, daily benefits for us:

- **Water purification**: Most of New York's drinking water comes from a watershed in the Catskill Mountains. No filtration is needed due to its natural water purification properties.
- **Food**: One third of our food supply is dependent on pollinators.
- **Soil**: A handful of soil can contain billions of living creatures. They interact with roots of plants growing in the soil and support the chemical processes to make them grow, for example, worms are crucial to soil fertility. The healthy biodiversity of soil prevents landslides, flooding and desertification.
- **Forests**: Forests absorb 30% of carbon emissions from fossil fuels and industry.
- **Medicine**: One third of the medicines used today come from nature, including 70% of cancer drugs, and genetic variation is vital for our medicines. Aspirin is made from the bark of willow trees - without nature, this medicine would not have been discovered.
- **Natural scenery**: Natural parks, alpine woods, snow for skiing etc provide tourism which supports the economy.

The state of biodiversity today

Human activity is causing rapid change to the delicate balance of ecosystems, and this is already having a devastating effect on the planet.

Over the past few centuries, the species extinction rate has increased rapidly. The UN states that extinction rates are between 100-1000 higher than ever before, and given that extinction occurs with a time lag, we could see up to one million species disappear by the end of this century. The International Union for Conservation of Nature (IUCN) includes 25% of mammals, 41% of amphibians and 13% of birds in its red list of wildlife under threat.

Habitats and ecosystems are also at risk. Globally, around 85% of wetland ecosystems and 50% of coral reefs have been destroyed, and 99% of coral reefs could disappear if the world warms up 1.5c. Scientists calculate that the biomass, or total weight, of flying insects that have been lost over the past three decades is over 75%.

The cause of the loss of natural capital is almost certainty human activity. An academic report finds that humans – making up just 0.01% of all living creatures - have caused the loss of 83% of known wild animals and 50% of plants with three quarters of land and two thirds of oceans “severely altered” by human actions.

The monetary cost of loss in biodiversity is enormous. According to the World Economic Forum, biodiversity loss is one of the top three risks over the next 5-10 years. The EU’s Biodiversity strategy for 2030 report from May 2020, estimates that the world lost between €3.5-18.5 trillion annually in ecosystem services from 1997 to 2011 due to land-cover change and degradation.

Despite posing significant threats to society, economies and business, biodiversity loss has garnered less attention from investors and policymakers than other sustainability issues such as climate change, but both are critically important to our quality of life and ultimately, our survival.

Stress on biodiversity

The world's biodiversity is under stress:

- Human activity has caused wildlife populations to drop by two thirds over the past years according to the World Wildlife Fund. This has been particularly acute in Latin America and the Caribbean, where the abundance of species has fallen by 94% since 1970.
- Each year, 10 million hectres of land (roughly the size of Germany) is deforested.
- 11% of global GDP (some USD 6.6 trillion) in environmental damage caused annually by human activity.
- Land degradation has reduced productivity in 23 per cent of the global terrestrial area
- Deforestation and land conversion account for 11% of global greenhouse gas emissions

The cost of losing biodiversty

Further declines in biodiversity can accelerate climate change, lead to mass famine, and contribute to the proliferation of new diseases. Nature loss can have important ramifications for both businesses and humanity in the short and long term.

A decline in the ecosystem services that nature provides will initially pose a direct physical risk to businesses as harvests become more unreliable, weather patterns change, and pollinators no longer support agriculture. The risk is both event-driven, such as flooding or drought, and longer-term, such as the reduction in rainfall caused by deforestation. The economic implications go far beyond "front-line" agriculture as businesses are the links in multi-national supply chains and support local livelihoods and tax income, so the reverberations are far-reaching.

As the depletion of nature becomes increasingly evident and communities begin to suffer the effects, there is an increasing risk of litigation and regulatory change for the businesses causing damage, such as penalty fines for ocean dumping, plastic pollution, or illegal deforestation.

With climate change, we have all become accustomed to the concept of reducing our footprint and discussing the goal of "net zero". The biodiversity crisis is still very new to many people, and we must quickly adapt to the concept of "net zero for carbon, net gain for nature" if we are to avoid mass extinction and the associated economic hardship.

"We often do not realise that our financial and economic lives are fuelled by nature. By damaging nature, we threaten our prosperity and our lives."

Velislava Dimitrova,
Sustainability portfolio manager,
Fidelity International

With at least half of the world's economy derived from biological resources, if we do not take strong measures now to protect our biodiversity, we will face greater harm in the future.

Costs of losing biodiversity

Further biodiversity loss can materially harm society and cause the following problems:

- **Disruption of supply chains**: More than 50% GDP depends on nature. The three largest sectors that are highly dependent on nature are construction, agriculture and food & beverages.
- **Accelerated climate change**: Nature-based solutions to climate change, such as carbon storage and absorption properties of peatlands and forests, are being lost.
- **Declining medical discovery**: We are losing one potential major drug every two years as a result of deforestation.
- **Mass famine and malnutrition**: One-third of food supply depends on pollinators and could be at risk from pollinator decline. We need a 67% increase in land area to meet expected food demand in 2050. One-third of the Earth's land is serverely degraded and fertile soil is being lost at a rate of 24 billion tonnes per year.
- **New diseases**: 75% of new human infectious diseases originate in animals. Biodiversity loss is driving wildlife into closer proximity with humans and increase the risk of outbreaks.
- **Economic decline**: Biodiversity loss could drain US$10 trillion from the global economy by 2050 if we do not make changes, according to the Global Futures report by the World Wildlife Fund.

Section 2: Investing in biodiversity

Waking up to biodiversity loss

Biodiversity loss is widely accepted as a significant threat to our existence, but the inability to easily measure and value biodiversity means it has been relatively neglected by investors, policymakers and society. But stakeholders are slowly waking up.

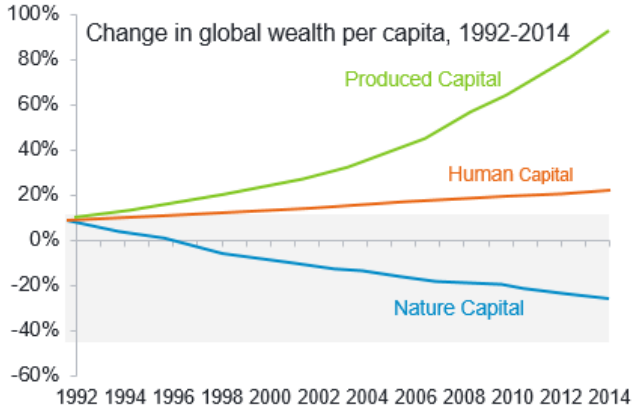
At COP 26, over 100 world leaders promised to end deforestation by 2030. The UN has a Strategic Plan for Forests through to 2030. The EU has published a strategy to reverse the EU's biodiversity losses by 2030 and in June 2022 the EC adopted proposals with explicit nature restoration targets. The UK government has begun to call for action to increase quantity/quality of stock of nature. France now requires investors to report on biodiversity and climate impacts and efforts at the portfolio level. The upcoming UN Biodiversity Conference will agree goals to ensure the shared vision of living in harmony with nature is fulfilled by 2050.

Investors and consumers are also starting to recognise the value of biodiversity, providing meaningful drivers to its investment growth. For example, Google searches for biodiversity and nature loss, relative to all searches, have been steadily increasing year on year all over the world, and were 16% higher in 2020 compared to 2016. Industry is also developing initiatives aimed at protecting biodiversity, such as the Finance for Biodiversity Pledge, Nature Action 100 and the Taskforce on Nature-related Financial Disclosures (TNFD).

The biodiversity investment gap

Valuing biodiversity is challenging when we are yet to fully know all the species on this planet, and when the value we hold in a specific species (both alone and as part of the broader ecosystem) is very difficult to quantify. The rate of ecosystem decline is also hard to track, and the true costs are typically slow to take full effect rather than event-based risk.

GDP growth hasn't properly accounted for natural capital



Source: Managi and Kumar (2018).

However, current investment is just US$133 billion or 0.1% of global GDP. An additional $144 trillion is required for climate change focused solutions.

More than two-thirds of OECD countries' biodiversity finance has come from public bodies. Whether the UN figures are exactly right or not, underinvestment in biodiversity is measured in trillions and more investment will have to come. All this public and private financing will translate into significant investment opportunities and risks to existing business models.

Biodiversity in investment decision making

As the investment industry adjusts to the physical risks of biodiversity loss, it is beginning to reassess the value of potentially vulnerable or stranded assets and make downward adjustments to their valuations, or even view them as liabilities. Consider the valuation shift of a consumer-facing business that pays no attention to biodiversity loss and as a result is vulnerable to both physical risks and reputational damage.

From climate change to plastic pollution - the causes for biodiversity loss are attracting solutions which will disrupt the fabric of the global economy. Many value chains will be transformed such as internal combustion vehicles, animal protein, plastic, and many more. The adoption of these solutions is also likely to be supported by policy tools, for example minimum levels of recycled plastic content in packaging, which will increase the cost of doing business. Disintermediation and rising compliance costs are material risks to business models globally and therefore to investor portfolios.

At the simplest level, we expect biodiversity-related risks to become increasingly prominent in investment decision making. Asset-allocation decisions may revolve around supply-chain mapping for sectors that are particularly exposed to natural resources and ecosystems.

For example, the agriculture and textiles sectors may require more mapping of hotspots of water scarcity and temperature rises. And in sectors that contribute to biodiversity risks, there will likely be heightened pressure for companies to change. For example, poorly managed tourism contributes to high waste and emissions that threaten local ecosystems.

Meanwhile we believe that investors should continue to develop, establish and roll out a robust methodology for measuring biodiversity loss, conservation and enhancement. This will be challenging, but more data and analysis will allow a clearer understanding of where financial capital could best be mobilised to enhance the world's natural capital.

Benefits of investing in biodiversity

We believe that biodiversity is an emerging megatrend and has a broad set of solutions with significant scope for growth in market penetration. Given the complexity of resolving biodiversity loss, this is a secular theme underpinned by sustainable growth drivers measured in years and decades. Markets are prone to short-termism and myopia, failing to appreciate the duration of growth of firms exposed to biodiversity. This feature together with the fundamental analysis of stocks has the potential to deliver alpha above the benchmark over time.

As well as generating long-term alpha and helping to protect biodiversity by channelling capital towards biodiversity solutions, the theme has other benefits. In particular, allocating to the right biodiversity solutions should help investors hedge their portfolios against risks from the transition to a more sustainable global economy:

- **Disintermediation risks**: many value chains will be disrupted, such as internal combustion vehicles, thermal power generation, animal proteins and plastic production. Companies investing in products solving the biodiversity crisis are likely to gain market share.
- **Regulatory risks**: increased policy and regulatory intervention in response to nature risks will lead to rising compliance costs, for example from the need to invest in expensive plastic solutions or CO2 pricing. There could be evolving frameworks for subsidies, resource quotas, taxes, certifications and fines.
- **Litigation risks**: there has been an acceleration in the number of climate change litigation cases: 1,587 cases have been identified between 1986 and 2020.
- **Reputational risks**: lack of consideration for biodiversity can result in lower brand value and loss of customer base. In 2010, Greenpeace launched a campaign against Nestle's KitKat brand, due to sourcing palm oil from deforested Indonesian rainforests.

Fidelity's commitment to biodiversity

Finance for Biodiversity Pledge - collaborating member

- At the UN Biodiversity Summit (2020), 26 financial institutions called on leaders to commit to nature conservation
- By 2024, we are committed to: collaborate / knowledge share, engage, assess impact, set targets, and report publicly against targets
- We are a member of three working groups on engagement, impact assessment and target setting

Natural Capital Investment Alliance - member

- NCIA unites investors to adopt Natural Capital as an investment theme, and is set to mobilise $10 billion (cross asset class) into Natural Capital by 2022
- Actively participating in working groups and communicated plan to launch a Natural Capital-aligned fund by 2022YE

Business Call for a UN Treaty on Plastics - signatory

- Collaborative call from businesses and financial institutions for the UN to develop a global treaty on plastic pollution
- This call was approved by 200 countries at the United Nations Environment Assembly (UNEA)

COP26 Finance Sector Commitment on Deforestation - signatory

- Investor-led initiative supported by collaboration from Nature4Climate Secretariat, Conservation International, UN PRI
- By 2025, we are committed: to eliminate forest-risk agricultural commodity-driven deforestation activities at companies in our investment portfolios and in our financing activities by 2025

Taskforce for Nature Related Financial Disclosures - forum member

- TNFD aims to develop a risk management & disclosure framework to incorporate evolving nature related risks
- This will promote a shift in global financial flows away from negative nature outcomes to nature-positive outcomes

Section 3: Fidelity's biodiversity investment solution

How we think about investing in biodiversity

The challenge of supporting biodiversity is vast and multi-faceted. There are a number of localised and global aggravators of biodiversity loss. Our investment approach starts with considering the problem from an investment and impact point of view, and identifies the causes of biodiversity loss and invests in their solutions.

It's crucial to invest in the entire value chain of solutions to biodiversity loss to ensure a comprehensive, effective and enduring response. This means helping those solutions reach scale and reach critical mass as quickly as possible.While many causes of biodiversity loss can be addressed through solutions available today, there are some with no clear answers. For example, many different chemicals are used in manufacturing and in our daily lives, and while we may be able to reduce the amount we consume and dispose of, we cannot eliminate them.

A meaningful biodiversity investment strategy that spurs real-world change should not simply seek to benefit from biodiversity loss, but instead support lasting solutions.

Therefore, where commercial solutions are not yet available, we can support companies leading the way to finding these solutions. These companies may have the right policies or products and services in place, and supporting them helps build the commercial frameworks required to tackle the causes of biodiversity loss.

Many underlying causes of biodiversity loss can be addressed through technological solutions that already exist but may need capital to build cost efficiencies and/or accelerate global adoption. This includes not only nascent technologies such as new recycling equipment, but also established and profitable approaches such as sustainable fish farming. In this way, investors can capture the long-term structural growth opportunities of preserving biodiversity.

A comprehensive approach to biodiversity that invests in the entire value chain also makes sense from a portfolio perspective. By investing across a range of sectors, regions, market caps and types of investment, investors can build a diversified portfolio rather than being concentrated in a small group of industries or technologies that may trade in unison or are vulnerable to regulatory changes.

This strategy combines the ability to generate alpha with preserving biodiversity. The impact of this theme can be seen in its allignment with the UN Sustainable Development Goals. To validate corporate impact on biodiversity, we also want to see verification by external, independent authorities.

UN SDGs can align with biodiversity investment strategies

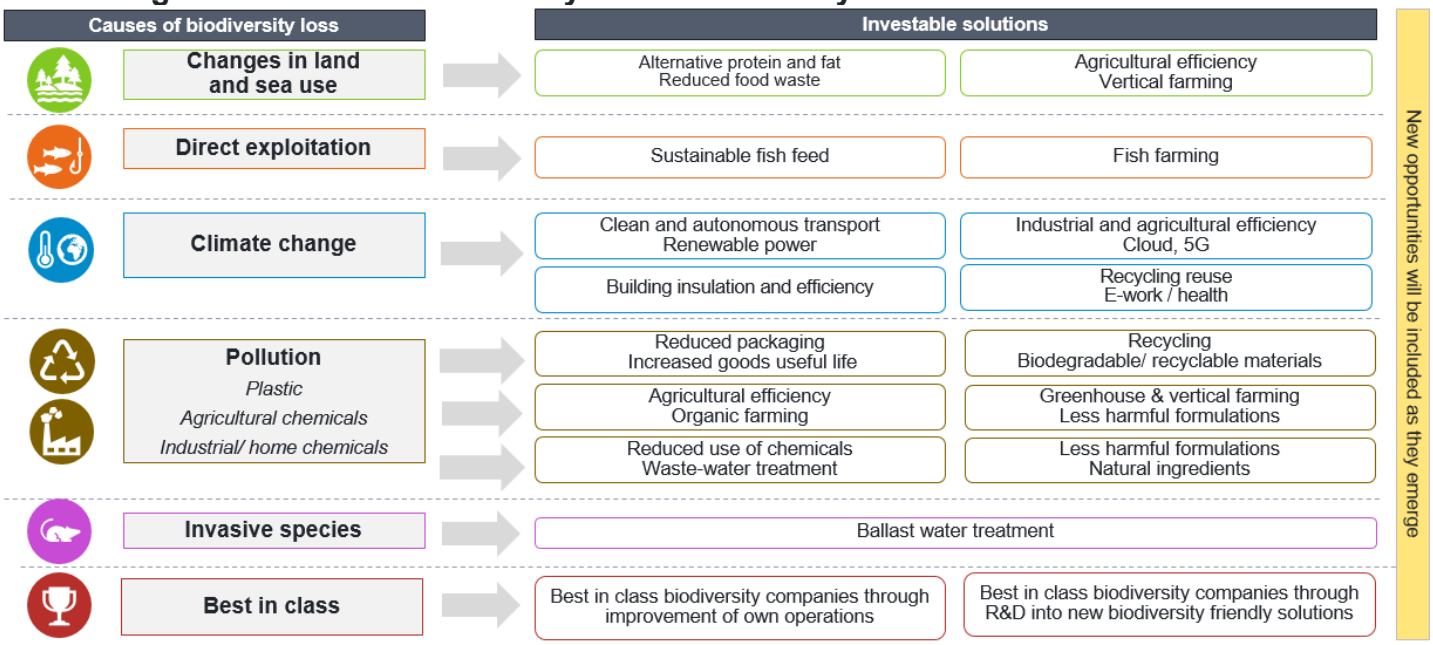
Biodiversity thematic has a particular focus on the following SDGs:

Source: Fidelity International, April 2022. For illustration purposes only.

Defining the investment universe

Biodiversity loss is not a homogenous issue, and its causes vary by geography, climate, habitat, and economic development. The way we approach allocating capital to biodiversity is to first identify the causes of biodiversity loss and their associated investable solutions, as well as companies that have the most ambitious biodiversity policies and targets while operating in sectors with high biodiversity impact.

Broad range of investable biodiversity solutions already exist



Source: Fidelity International, July 2022.

From the list of causes of biodviersity loss, there are five where solutions at different stages of maturity exist:

- changes in land and sea
- direct exploitation
- climate change
- pollution
- invasive species

Companies that provide solutions to these problems and those with the best practices in terms of their own operations or allocating capital to finding new solutions, make up the investment universe.

To ensure adequate exposure to the theme in specific stock picks and the overall portfolio, a purity threshold should be selected. We think at least 20% revenues on a company level, derived from one or more of the solutions above, will ensure a good level of thematic purity. On a portfolio level we are looking for 60% of revenues in the solutions category to be derived from biodiversity loss solutions.

Solutions providers will form most of the holdings in the portfolio. The best-in-class category is smaller but has an essential contribution to addressing biodiversity loss. We include two types of companies in the best-in-class category:

- In cases where solutions are not yet viable, best in class companies have utilised their own R&D to develop new technologies. For example, businesses that reduce their packaging volumes or search for less harmful chemical formulations.
- In sectors with meaningfully negative biodiversity impact, companies with the best operational processes and targets in terms of how they affect biodiversity.

The process to identify the solutions providers and best in class companies is research-intensive, requiring specialised analysis and extensive research capabilities to understand companies from an integrated perspective.

There needs to be ongoing interaction with companies to understand the end markets for their products, particularly companies higher up the value chain of biodiversity solutions, to accurately review their priorities around the impact on biodiversity of their own operations, and to identify companies developing early-stage

biodiversity friendly products. This naturally lends itself to an active management approach.

The process results in a broad and diversified universe of over 1,000 companies representing many sectors and geographies, and spanning the market cap spectrum.

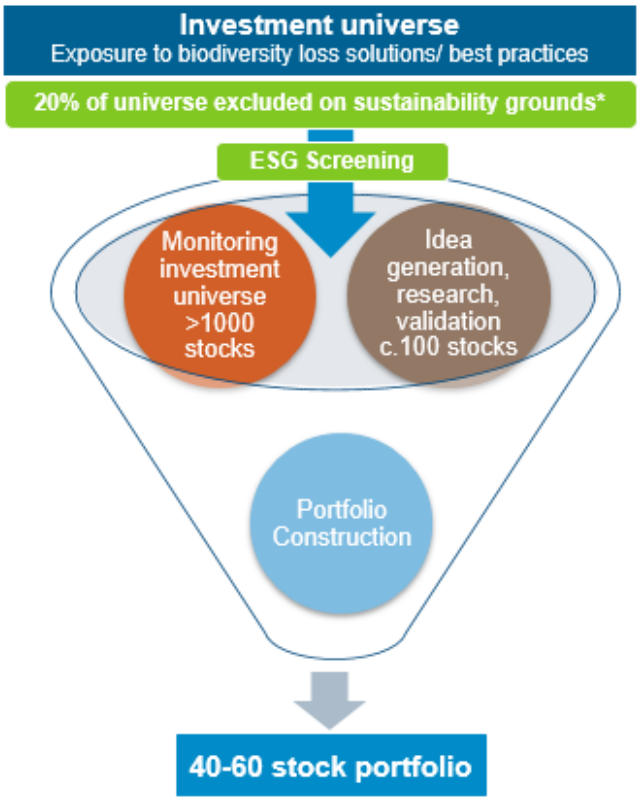
The investment process

Our strategy uses a structured and repeatable investment process geared towards identifying companies that help preserve biodiversity and have the potential to deliver positive investment returns.

The multi-stage investment process consists of:

- An investment universe of hand-picked stocks with exposure to the value chain of solutions to biodiversity loss, or best practices in terms of their own operations or development of new biodiversity friendly products. Using third party data providers to identify best in class companies. This universe is continually monitored and updated.
- A shortlist of high-quality names that are likely ownership candidates, continually monitored and updated.
- Idea generation out of universe/ shortlist
- Stock research and validation
- Portfolio construction and risk management
- Portfolio monitoring and oversight

Overview of the investment process



Source: Fidelity International, April 2022. For illustrative purposes only.

- Value chain of companies involved in providing solutions to reduce biodiversity loss or best in class biodiversity companies
- Constantly evolving, research-intensive bespoke handpicked universe
- Requires extra level of qualification with deep company interaction
- Identify subsectors that will capture the most value from the growth ahead
- Favour high barriers to entry, favourable competitive dynamics, best in class returns, appropriate leverage
- Measure best in class quality on growth profitability, cash generation and financial strength
- Looking for stocks where valuation does not reflect growth and returns profile
- Best ideas on risk-adjusted basis on a ~5-year view.
- No fixed targets for exposure to any given theme
- Diversified across themes
- Over 60% purity at portfolio level in solutions
- Ongoing portfolio monitoring
- 15-20 new ideas per year

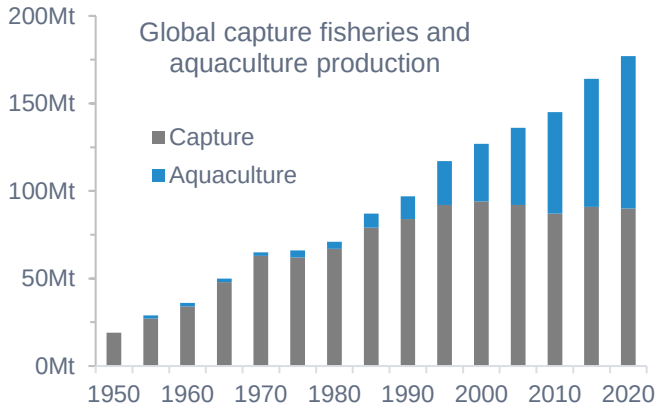
Case studies

Biodiversity solutions: Bakkafrost

Fish farming is one of the possible solutions to solving today's overfishing crisis.

To meet our rapidly growing demand for fish consumption, suppliers have depleted fish stocks to biologically unsustainable levels in many marine and inland waters.

Aquaculture rapidly growing as a sustainable fish source



Source: FAO, 2022.

Over the next five years, demand is expected to outstrip supply so more capital needs to be allocated towards companies with sustainable fishing practices to help nurture fish stocks back to biologically sustainable levels and prevent further biodiversity loss through ocean trawling.

Norwegian salmon farmers Bakkafrost, cultivates fish in a controlled environment in their locations in the Faroe Islands and Scotland to reduce pressure on local fish stocks. Its aquaculture process prioritises the healthiness of its salmon and the company shuns the use antibiotics and additives. For example, Bakkafrost is transitioning to fresh water and mechanical methods to treat sea lice instead of delousing chemicals.

Bakkafrost not only has attractive biodiversity credentials but also strong fundamental characteristics. Its operational model results in top quality salmon that is bigger, healthier, and has higher omega-3 content than peers allowing the company to command a price premium for its products.

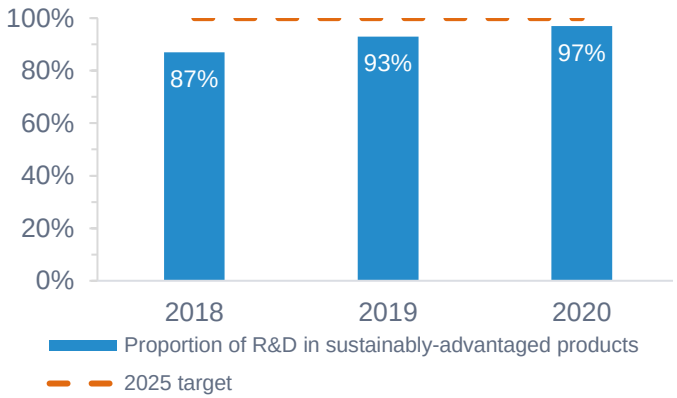
Together with its highly integrated value chain and full market access, Bakkafrost is able to deliver industry-leading margins. Its sustainability philosophy penetrates through the company, whether that's its purchase of fully electric workboats, certifications of Global Food Safety standards, and effective capital allocation decision making from the senior management.

Best in class (R&D): FMC

We analyse best in class companies through two parameters: companies investment to develop new biodiversity friendly products or improvement of companies' own operations that reduces their impact on biodiversity.

FMC is an example of a company we believe is best in class in its R&D spending to develop new biodiversity friendly formulations. FMC is a leading pure-play crop protection chemical company. It already has a sustainably driven investment strategy, but it plans to continue improving and intends to spend its entire R&D budget on developing sustainably advantaged products by 2025.

FMC best-in-class in biodiversity investment



Source: FMC, 2022.

One of the products it wants to develop is biologically friendly pesticides, which will be crucial to combat biodiversity loss. Excessive use of pesticides contaminates surrounding soil and water sources, leading to a decline in beneficial pest predators and essential pollinators, such as bees. A report by Financial Nature estimates that the worldwide loss of all pollinators (including bees, butterflies, moths and other insects) would lead to a drop in annual agricultural output of about US$217 billion. Current pesticide practices need to become more biologically friendly, and FMC is working to develop solutions that will support that effort.

As a business, FMC has a global presence, robust product pipeline, and a strong competitive moat with high barriers to entry - each 'active ingredient' takes 10-12 years to develop with extensive capital required. It also has robust cash flow generation and a consistent track record of value enhancing M&A.

FMC's long-term and sustainability-led mindset can be seen in its sustainable R&D policy and innovative pipeline, which should enable it to expand its market share as well as protect biodiversity. The company has carbon reduction targets, health and safety policies linked to executive remuneration, and business ethics and corruption policies are managed at the executive level.

Conclusion: Acting now to preserve biodiversity

Species are interconnected through complex networks providing valuable ecosystem services, and we are part of this system. Biodiversity is our life support mechanism - our livelihoods, well-being and key economic activities all depend on well-functioning ecosystems.

Investors are increasingly recognising the importance of biodiversity and the grave implications of its loss. But if swift action is not taken, we could end up devastating our societal and financial resources. As investors become more aware of the challenges facing biodiversity, it is crucial that this leads to a reallocation of capital into companies, projects and solutions that benefit our natural ecosystems.

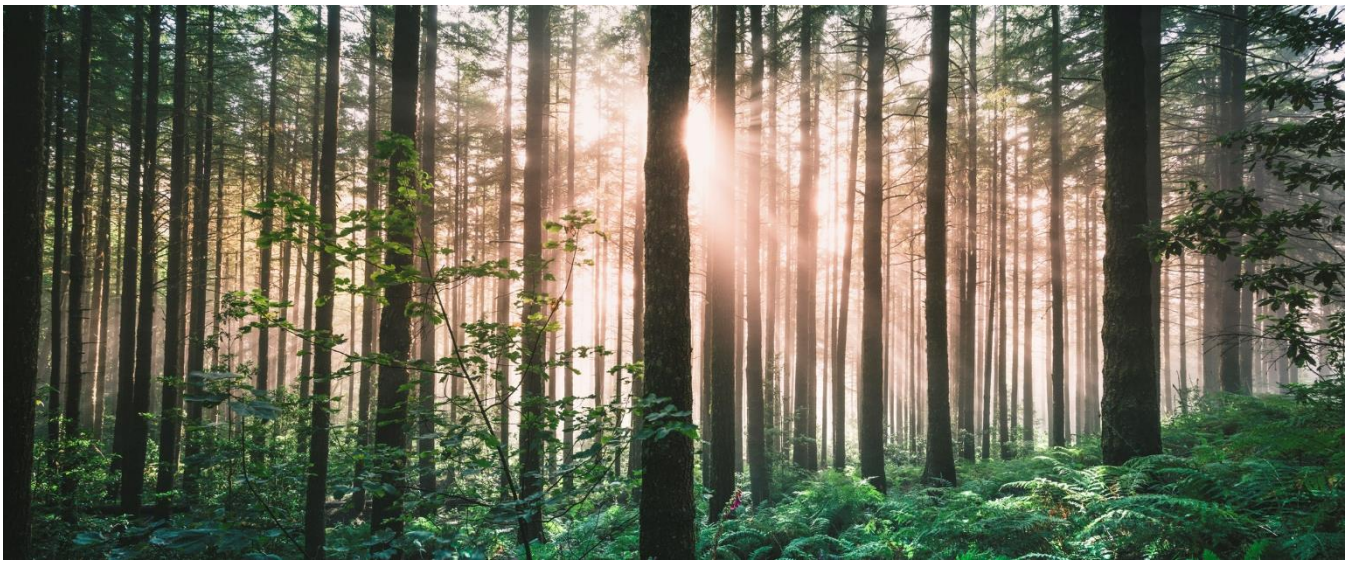
Reassuringly, the subject of biodiversity has shot up the agenda for policymakers. The UN Biodiversity Conference (COP 15), due to take place in Montreal, Canada in December 2022, will bring further global attention to the issue.

The unsavoury truth is that as the human population grows, our demands for food, energy and resources will increase, and greater strain will be placed on our natural capital. To manage this and preserve biodiversity, fundamental changes across industry, supply chains, technology, economies and society are required.

Investors will need to be prepared for changes in governmental and regulatory policy, initiatives to standardise and measure biodiversity risks, more rigorous auditing and assessment of portfolios for biodiversity-related exposures, new approaches to critically evaluate companies, and increasing awareness of supply chain weaknesses where issues such as deforestation and threats to species are acute.

Biodiversity is one of the largest investment megatrends in our lives and the theme is at an inflection point. There is a ready set of solutions that can slow down the loss of biodiversity and these are rapidly being adopted. Government support will further accelerate their growth. The market is expected to grow over decades, with innovation driving new opportunities, creating a theme worth trillions of dollars that generates long-term, sustained alpha.

Just as the investment industry made rapid progress after a slow start in responding to climate change, we must also rise to the challenge of preserving biodiversity. If we harness our research and analytical capabilities, relationships with companies, and partnerships with clients to move beyond discussion and aspiration, we can make genuine, quantifiable, and enduring changes to prevent the destruction of our natural capital.



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