

Financing Nature - the next **big frontier**



UN SDGS ALIGNED TO BIODIVERSITY:



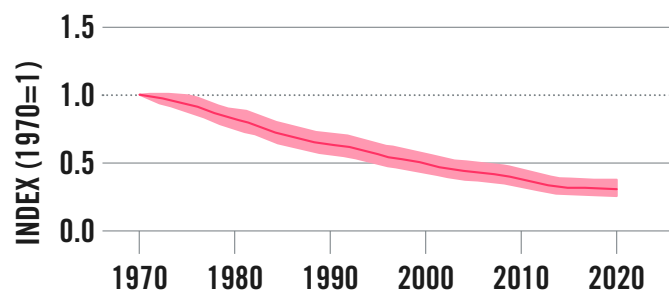
Measuring life as a **strategic reserve**

Biodiversity is used to quantify life in terms of ecological richness (the frequency of species present) and abundance (the number of individual specie per population). Rich and stable biodiversity levels are essential for regulating large scale keystone ecosystems and fundamental in maintaining a consistent, fertile, and resilient human habitat.

Quantifying nature is often viewed through a ‘natural capital’ lens - air, biodiversity, water, soil and minerals - as strategic and (mostly) renewable reserves which provide ecosystem services and products crucial to our survival and growth. These strategic reserves are currently poorly managed, overexploited, and in decline. Of the estimated 8 million species on Earth (1.7 million described), up to 1 million are threatened with extinction, many within decades,⁴ and reports estimating abundance reveal declines of up to 69% over the last 50 years for all species globally.⁵

Overextraction of natural capital, leading to depleted biodiversity reserves, threatens to erode the natural systems. Systems which provide adequate food, potable water, breathable air, and a habitable climate to the point of collapse, not just in the future, but within our lifetime. How did this happen?

THE WORLD WIDE FUND FOR NATURE (WWF) LIVING PLANET INDEX 2022



SOURCE: Living Planet Index, WWF⁶
WWF's Living Planet Index 2022 reveals global wildlife populations have plummeted by 69% on average since 1970

1 www.weforum.org/press/2020/01/half-of-world-s-gdp-moderately-or-highly-dependent-on-nature-says-new-report

2 livingplanet.panda.org/en-GB/

3 research.wri.org/gfr/forest-extent-indicators/forest-loss

4 UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating' - United Nations Sustainable Development

5 www.livingplanetindex.org/

6 www.livingplanetindex.org/latest_results

Biodiversity in the Anthropocene

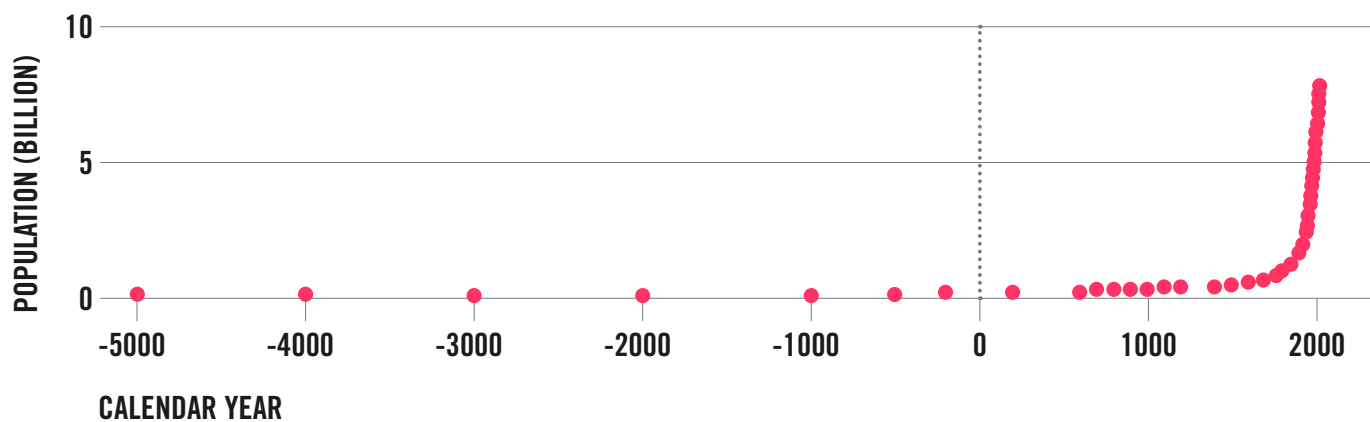
POPULATION GROWTH AND RESOURCE DEMAND

Biodiversity collapses - extinction events in which 95% of life on Earth is lost - have occurred five times in life's estimated 4-billion-year span on Earth⁷. A sixth mass extinction is now predicted to be occurring due to human driven pressures as the global population swells to all-time highs.⁸

Homo sapiens (humans) first appeared roughly 3.7 billion years after the emergence of life on Earth. From there, it took an approximate 313,000 years for the population to surpass

one billion for the first time (est. 1804), 123 years to double a second time to two billion (est.1927), 47 years to double again to four billion (est. 1974), and potentially less than 50 years to double again to 8 billion (estimated by Q1 2023).⁹ The human population on Earth has not yet peaked and is projected to reach 9.7 billion by 2050.¹⁰

WORLD POPULATION, 5000 BC – 2020 AD



SOURCE: World Population by Year, Worldometer¹¹

During the last population doubling, global ecological boundaries were breached. Until 1970, humanity's ecological footprint - the impact of our demand on space and resources - was smaller than the Earth's rate of regeneration. Since that time, the global economy has quadrupled¹², and global GDP has increased by more than 350% in real terms.^{13,14} We now overshoot Earth's biocapacity by at least 56%.¹⁵

Humans are unquestionably the dominant ecosystem engineers on Earth, and these exponential increases in density-dependant demand (food, shelter, and space) have driven a dramatic shift in the shape and flow of ecological and climatic systems. As such, scientists have announced a new age - marked by the explosion of the first atomic bomb or the arrival of plastics into the geologic

record - where our impact on natural systems became the dominant driver of change, named The Anthropocene.¹⁶

This unprecedented, exponential, and ongoing boom in population has led to significant and (in some cases) irreversible declines in biodiversity. Some species naturally become extinct and are replaced by others (with median extinction rates estimated at between 0.023-0.135 extinction per million species per year, known as the natural background rate.¹⁷ Currently, extinction rates are 1,000 times higher than this, with future estimates projecting an extinction pressure 10,000 times the natural background rate with the responsibility solely on anthropogenic activity.¹⁸

7 www.theguardian.com/environment/2017/jul/10/earths-sixth-mass-extinction-event-already-underway-scientists-warn

8 www.un.org/en/global-issues/population#:~:text=The%20world's%20population%20is%20expected,nearly%2011%20billion%20around%202100

9 World Population by Year - Worldometer

10 Future Population Growth - Our World in Data

11 www.worldometers.info/world-population/world-population-by-year/

12 GDP (constant 2015 \$US) GDP (constant 2015 US\$) | Data (worldbank.org)

13 GDP in 2015 USD

14 data.worldbank.org/indicator/NY.GDP.MKTP.KD

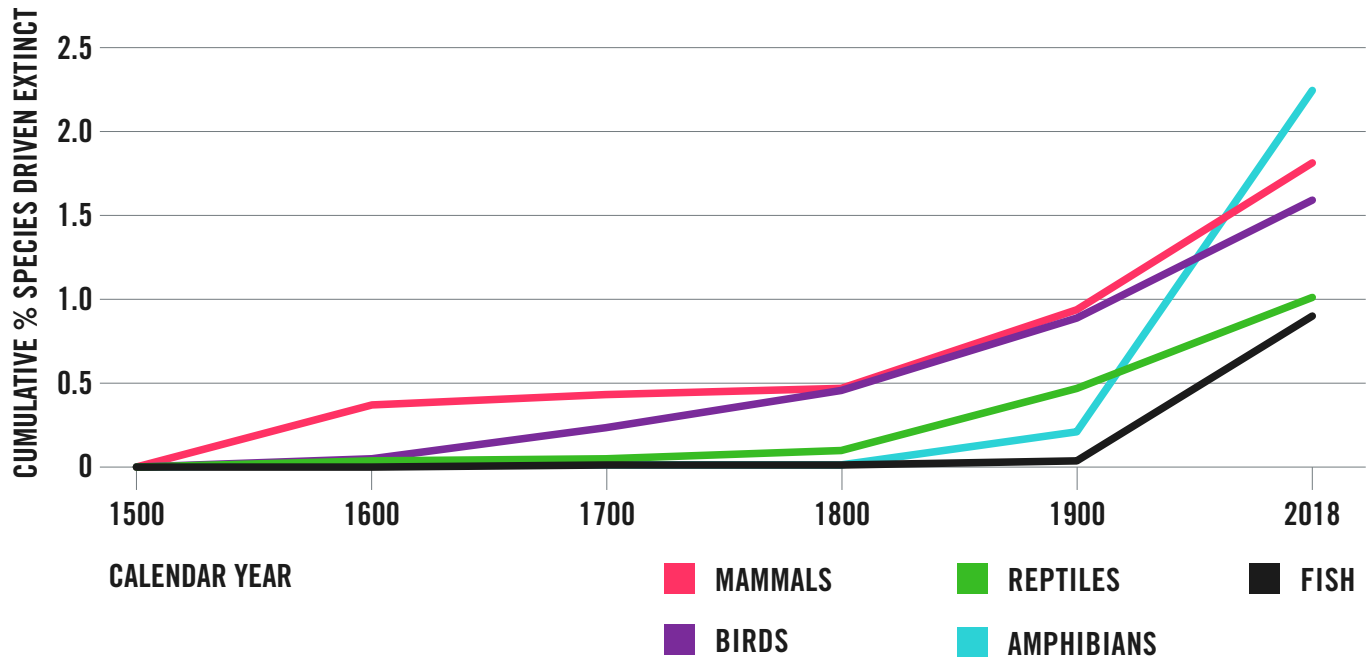
15 worldwildlife.org

16 Anthropocene, the plastic age and future perspectives. - Abstract - Europe PMC

17 The Society for Conservation Biology (wiley.com)

18 *ibid*

EXTINCTIONS SINCE 1500



SOURCE: The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), WWF¹⁹
 A substantial proportion of assessed species are threatened with extinction and overall trends are deteriorating, with extinction rates increasing sharply in the past century.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) ranks the key drivers of harmful ecosystem change as: (in descending order)

- changes in land and sea use;
- direct exploitation of organisms;
- climate change;
- pollution;
- invasive alien species - all activities directly linked with how commerce currently interacts with the environment.

This downward pressure has manifested in three distinct and intersectional impacts:

1. deletion of natural capital by produced capital
2. conversion of natural habitats
3. degradation of the natural environment by anthropogenic pollution.

DELETION OF NATURAL CAPITAL

As our population has grown, natural habitats have been replaced by anthropogenic mass (inert matter such as asphalt, bricks, and concrete) at an exponential rate, reportedly doubling every 20 years since 1900.²⁰ It was estimated that by 2020, the weight of anthropogenic mass outweighed all global

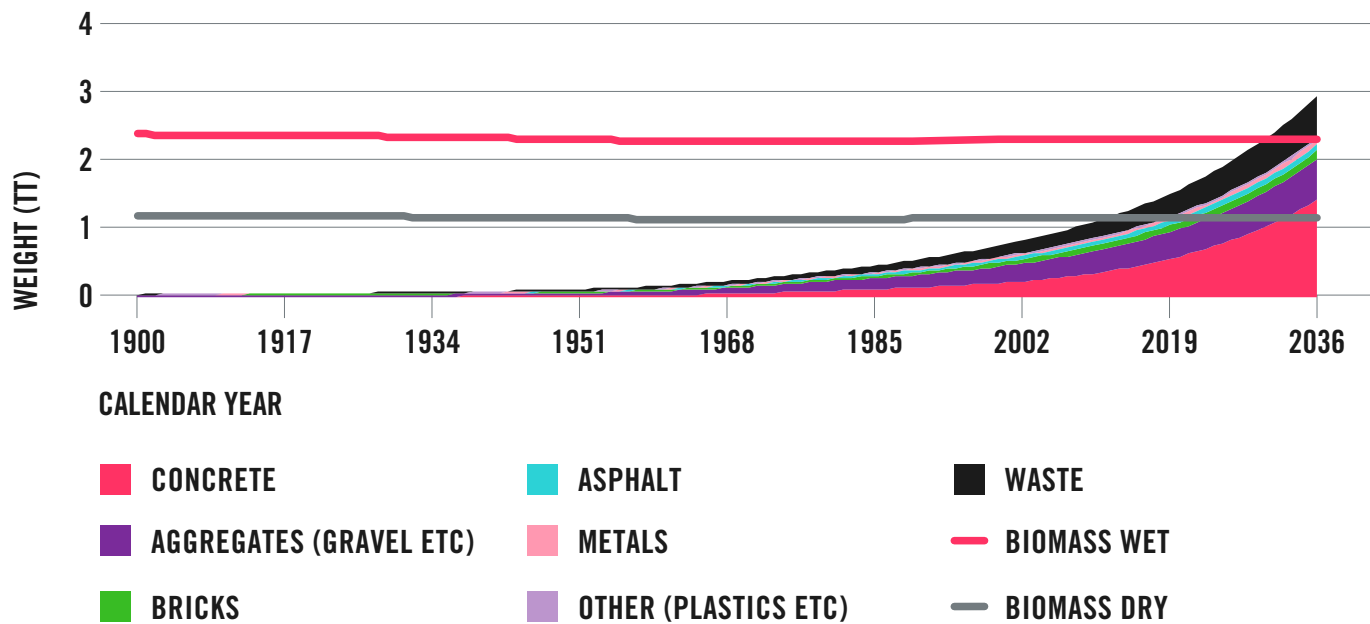
living biomass (all plants, animals, bacteria, fungi protists, archaea, and viruses) for the first time. Accessibility and urbanisation are important enablers of biodiversity decline - 95% of Amazonian deforestation has occurred within 5.5km of a road, or 1km from a navigable river.²¹

19 IPBES 2019 Report (panda.org)

20 Global human-made mass exceeds all living biomass | Nature

21 Roads, deforestation, and the mitigating effect of protected areas in the Amazon - ScienceDirect

BIOMASS AND ANTHROPOGENIC MASS ESTIMATES SINCE 1900 IN TERATONNES (TT)



SOURCE: Global human-made mass exceeds all living biomass, Nature.com²²

CONVERSION OF ECOSYSTEMS

To support a growing population, vast tracts of land have been converted to agriculture and animal husbandry. 75% of the terrestrial environment has been severely altered by human actions to date, and 66% of marine environments.²³ The world has lost 437 million hectares (mha) of tree cover since 2000 (10% of 2001 global tree cover). This rate of loss has been increasing, from 13.4mha in 2001, to 25.8mha in 2020.²⁴

Conversion of natural ecosystems to curated ecosystems hasn't been zero-sum. Since the first agricultural revolution (-12,000 years ago), humans have halved the global plant matter biomass - while modern agriculture utilises an increasing land area for growing crops, the total mass of domesticated crops is significantly lower than the pre-existing ecosystem lost or degraded by deforestation, forest management or other land-use changes.²⁵

INCREASED SPECIES CONCENTRATION RISK

Conversion has not only lowered the total volume of biomass in existence, but also simplified it. Today, 75%

of terrestrial food is generated by 12 plant and 5 animal species.²⁶ This is a significant concentration risk for food security, directly undercutting our food system's resilience against future challenges such as climate change, pests and pathogens.

TIPPING TOWARD COLLAPSE

Conversion not only comes at the direct cost of ecosystem loss but can have a synergistic effect in the degradation of wider ecosystems, through the breach of 'tipping points'. For example, concern grows over an emergent risk of a major dieback event in the Amazon rainforest. As climate change (in the form of longer dry seasons, and drought frequency), and rampant deforestation (lowering the volume of moisture travelling over the area) continues to escalate, regulation of the climatic conditions required for rainforests are weakening. Since 2000, 76.2% of observed area in the Amazon has shown a decrease in resilience, consistent with this approach to a critical transition point.²⁷

22 Global human-made mass exceeds all living biomass | Nature

23 UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating' - United Nations Sustainable Development

24 Forest Loss | Global Forest Review (wri.org)

25 Global human-made mass exceeds all living biomass | Nature

26 pr-2019-05-22-idb-en.pdf (cbd.int)

27 Pronounced loss of Amazon rainforest resilience since the early 2000s | Nature Climate Change

DEGRADATION OF THE NATURAL ENVIRONMENT

Inefficient practice and supply chains drive chemical leakage and externalities which degrade natural ecosystems and biodiversity without providing a tangible benefit (with the exception of lowering waste handling fees for companies). Notably, marine plastic pollution has increased ten-fold since 1980, affecting 86% of marine turtles, 44% of seabirds, and 43% of marine mammals.²⁷

Inefficient fertiliser use, and improper disposal of animal agriculture externalities means the number of dead zones (oxygen-free areas in the ocean) has quadrupled since 1950.²⁸

As written in ‘**Investing in food security**’ overuse of fertiliser and pesticides are also driving terrestrial degradation and a die-off of key pollinator species such as bees - a 2017 study observed a seasonal decline of 76% (and mid-summer decline of 82%) of flying insect biomass over 27 years in 63 nature protection sites in Germany.²⁹

The **intersection** with finance

Finance is a central driver in large scale biodiversity loss. It provides the backbone of capital for uncontrolled expansion and the incentive structure for the expanding provision of cheap, unsustainable goods - often subsidised by natural capital and biodiversity. This means that markets are heavily exposed to critical declines in biodiversity and may benefit from their regulation and recovery. In 2020, the World Economic Forum (WEF) estimated that \$44 trillion, or around 50% of global GDP, was either highly or moderately dependent on nature and its services.³⁰

WEF also estimates that less than 10% of this value (\$4.1 trillion) is needed over the next 30 years to properly address and mitigate climate change, biodiversity loss, and land degradation.³¹ Even without this understanding, mitigating oncoming biodiversity risk is essential in the mid-to-long term. WEF’s 2022 Global Risks Report paints a bleak image of 10-year environmental health perceptions, with “climate

action failure”, “extreme weather”, and “biodiversity loss” ranking as the top three most severe risks.

Provision of financial services to those who degrade (or are viewed to degrade) biodiversity, accompanies rising credit and reputational risk for financial institutions. Failure to effectively screen for biodiversity risk and compliance may create project delays and operational risks that can and will increase financial risks within the lenders business.³² Climate change, biodiversity loss, and species extinction are systemic risks for businesses and investors which require innovative, comprehensive, and diligent approaches to both manage the risk, and harness the opportunity.³³

Strategic and patient capital is required alongside increasing regulation and policy and the new Kunming-Montreal Global Biodiversity Framework has helped map this out.

27 IPBES 2019 Report (panda.org)

28 What is an ocean dead zone and why are they getting worse? | World Economic Forum (weforum.org)

29 More than 75 percent decline over 27 years in total flying insect biomass in protected areas (plos.org)

30 Half of World’s GDP Moderately or Highly Dependent on Nature, Says New Report > Press releases | World Economic Forum (weforum.org)

31 The intersection of biodiversity and the climate crisis - BNP Paribas CIB

32 biodiversity-risk-in-the-finance-sector-nov-2020.pdf (libf.ac.uk)

33 The intersection of biodiversity and the climate crisis - BNP Paribas CIB

Investing in Biodiversity

Biodiversity specifically, and natural capital more widely, is difficult to measure accurately. Our current economic system struggles to a) define natural capital and b) value it. This is largely down to the complexity of the value it provides and the inability to adequately communicate that value in traditional financial formulas. As a result, the costs of using, degrading or destroying natural systems are poorly understood and seldom factored onto a balance sheet/profit and loss accounting record.

Unlike other forms of capital, the value of natural capital doesn't necessarily depreciate. In fact, in a constrained world, where resources become key, the value of natural capital can often appreciate. Additionally, within normal sustainable parameters, if degraded, natural capital can become self-regenerative. Factoring in these dynamics is extraordinarily complex and challenging for a system (finance) that thrives on linearity.

THE FRAMEWORKS AND TOOLS

Biodiversity is both a risk and an opportunity for investors. The concept of **double materiality** applies in that any investment can both erode biodiversity (the risk a business poses to the environment) and regenerate and nurture biodiversity (the value add of that business). **Dynamic materiality** also means what once was not a risk to a business or to society, can become a risk, and vice versa. There is also the need to factor in **context** and **threshold-based materiality**, where an investor needs to assess performance in the context of the limits, thresholds and demands placed on economic, environmental, or social resources, which is also critical.

Currently, accounting and reporting standards for businesses don't go this far. The work that the United Research Institute for Social Development (UNRISD)³⁴ and R3-O Org³⁵ are undertaking on this threshold and context-based materiality will hopefully be factored into the leading industry bodies currently working on accounting and disclosure. The International Sustainability Standards Board (IISB),³⁶ European Financial Reporting Advisory Group (EFRAG),³⁷ Taskforce on Nature-Related Financial Disclosures (TNFD),³⁸ the Harvard Impact Weighted Accounts Project and the Global Reporting Initiative⁴⁰, to name a few, are tools investors can use to better understand the type of disclosure on biodiversity performance that's currently being encouraged. TNFD is the one framework dedicated to biodiversity specifically and, although currently in consultation, is expected to be market ready in September 2023. A lot rides on this framework, specifically in helping business and finance understand how and what to measure, manage and disclose.

There are other existing tools open to businesses and investors. For example, International Accounting Standard (IAS) 41 (Agriculture), first applied in 2003, measures the transformation of biological assets (living plants and animals) into agricultural

produce (harvested product of the entity's biological assets), measured at fair value less costs to sell.⁴¹ This can be a substantial boon in valuation for companies exposed to agricultural production. For example, Mowi - one of the world's leading farmed salmon producers - reported biological assets as 43.7% of their total assets in 2021 (€638.2 million).⁴² Additionally, in March 2022, The Partnership for Biodiversity Accounting Financials (PBAF) announced the development of a new accounting standard for biodiversity accounting,⁴³ following on from their 2020 report "**Paving the way towards a harmonised biodiversity accounting approach for the financial sector**".⁴⁴

The emergence of taxonomies will also help investors understand what constitutes a 'nature friendly' investment. The EU Sustainable Finance Taxonomy includes the protection and restoration of biodiversity and ecosystems and will be critical for integrating sustainability considerations into the capital markets and re-orienting capital flows towards sustainable growth. Under the taxonomy regulation, for an activity to be classified as 'sustainable' it must do no significant harm to several environmental objectives including protection of healthy ecosystems. The taxonomy will provide investors, pension funds and private equity firms with a common definition of what is green and what is not, in order to channel more capital into sustainable businesses and prevent greenwashing.⁴⁵

Investors may not have all the tools they currently need to identify the impact of their decision making on biodiversity and nature, but the frameworks and thinking are in the market to enable better decision making.

INVESTMENT OPPORTUNITIES

Knowing that there's enough information in the market to understand what constitutes good and poor practice, where nature-based thresholds are currently being breached, and the solutions that are needed to drive business (and finance) back into the safe space where everything and everyone thrives, provides investors with a range of investment opportunities. From sustainable aquaculture to precision agricultural technology (agtech), rewilding to plant-based diets, conservation to eco-tourism - our relationship with nature means most of our systems rely, in some way, on natural capital and biodiversity.

And much like investing in energy, the existential question posed to any investor here is transition and/or solution. Much like the divestment debate we covered in our article '**Should I stay or should I go? The divestment debate**', there's as much need for capital to flow to the solutions as there is capital to be invested in those causing those threshold breaches. The trick with the latter is in knowing how to forcefully steward those companies to future fitness, and back within thresholds. This comes down almost exclusively to the intent of that company, the intent of its

34 www.unrisd.org/en

35 www.r3-0.org/

36 www.ifrs.org/projects/completed-projects/2021/sustainability-reporting/

37 www.efrag.org/

38 tnfd.global/

39 www.hbs.edu/impact-weighted-accounts/Pages/default.aspx

40 www.globalreporting.org/

41 IAS 41 — Agriculture (iasplus.com)

42 Integrated Annual Report 2021 (calameo.com) (Page 232)

43 New PBAF standard to help investors assess biodiversity impact | Impact Investor (impact-investor.com)

44 PBAF_commongroundpaper2020.pdf (pbafglobal.com)

45 EU taxonomy for sustainable activities | European Commission (europa.eu)

other shareholders, and the agency and influence that investor has. The tools and the research we've highlighted previously become critical components of any engagement in this sphere. Transition pathways will have to be defined, mapped and adhered to. Milestones and deliverables become a fundamental part of investing in this way.

Solution based investing requires a knowledge of what is needed that doesn't currently exist and/or is nascent and not yet at a scale that provides clear pathways for adoption by the

mainstream. It's investing in innovation and disruption backed by science and consumer sentiment and business demand. It's here that the technologies, services and solutions that can be adopted by those businesses transitioning become the investment potential.

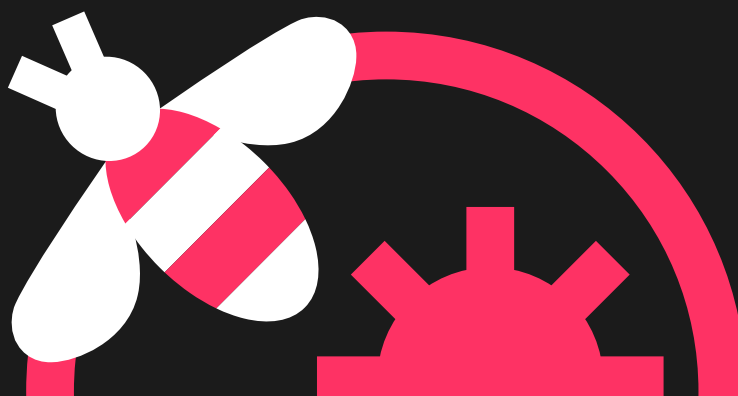
Investment in solutions-based opportunities can be largely defined into four material areas:

1. Food

Our relationship with food has both a negative and positive impact on our planet. What we consume, how much and how often is underpinned by a large, mechanised and industrialised food system and can either be (and is in the main) extractive, or one that is regenerative. Large scale industrialised agriculture has plundered our natural capital, especially our soil health and our wooded areas. This is critically important given the role soils have in storing carbon. Research estimates that 133bn tonnes of carbon, or 8% of total global soil carbon stocks, may have been lost from the top two metres of the world's soil since the dawn of agriculture.⁴⁶ The loss of our nutrient rich topsoil through intensive agriculture is a huge area of concern. Each year, an estimated 24 billion tonnes of fertile soil is lost due to erosion. That's 3.4 tonnes lost every year for every person on the planet.⁴⁷ These impacts are critical and that's before we address insect population collapse,⁴⁸ water pollution from agriculture,⁴⁹ food waste⁵⁰ and deforestation.⁵¹ The biggest cause of deforestation is agricultural deforestation. That accounts for c. 80% of all deforestation.⁵²

Looking beyond the industrialisation of agriculture to the innovations of organic and regenerative agriculture, agtech for precision watering including hydroponics, pest control and application of growth compounds, and vertical farming are all investment opportunities supporting tomorrow's food system. With the need to get our food-based industries back within natural thresholds, it's an area of growth. Factor in changing consumer sentiment and the rise of the plant-based diet (analysts now estimate the plant-based food market will grow by 11.9 percent by 2027 and have valued it at \$74.2 billion⁵³). Technology in the consumer space allows customers to track and trace provenance of their food and its impact, as much as it allows consumers to food share to prevent waste.

An area of caution with plant-based food and meat substitutes is that they can be higher in sodium and saturated fat than their meat-based equivalents, drawing into question their nutritional values. Managing these trade-offs is part of the investment process.



46 www.pnas.org/doi/pdf/10.1073/pnas.1706103114

47 www.globalagriculture.org/report-topics/soil-fertility-and-erosion.html#:~:text=Each%20year%2C%20an%20estimated%2024,every%20person%20on%20the%20planet

48 policy.friendsoftheearth.uk/insight/insectageddon-whats-happening-bees-and-other-insects

49 www.fao.org/3/i7754e/i7754e.pdf

50 www.un.org/en/observances/end-food-waste-day

51 www.fao.org/newsroom/detail/cop26-agricultural-expansion-drives-almost-90-percent-of-global-deforestation/en

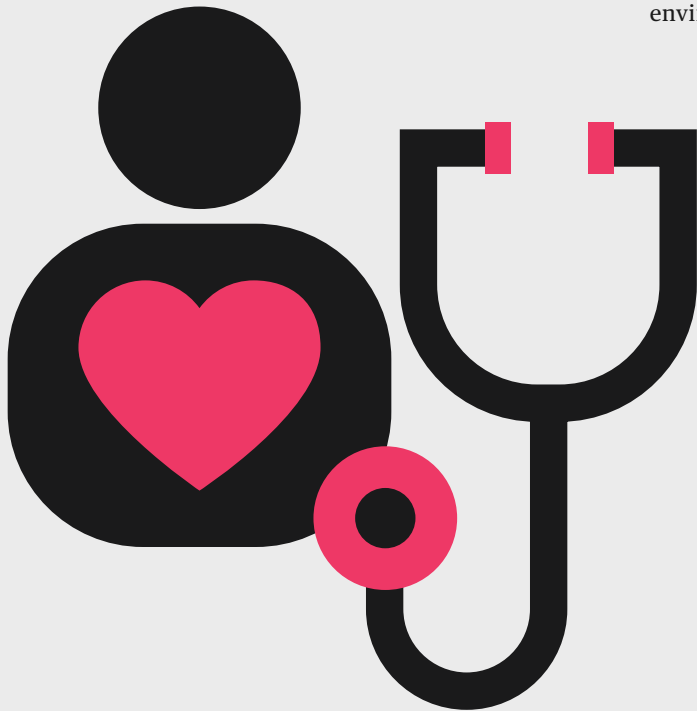
52 www.fern.org/publications-insight/what-are-the-causes-of-deforestation-1975/

53 www.globenewswire.com/news-release/2020/08/13/2077824/0/en/Plant-based-Food-Market-Worth-74-2-Billion-by-2027-Growing-at-a-CAGR-of-11-9-from-2020-Pre-and-Post-COVID-19-Market-Opportunity-Analysis-and-Industry-Forecasts-by-Meticulous-Resear.html

2. Health

It's estimated by the World Health Organisation that 11% of the world's essential medicines derive purely from flowering plants. More broadly, 80% of registered medicines come from plants, or have been inspired by natural products.⁵⁴ Nature provides us with cures for our illnesses and, yet, this relationship is in jeopardy. As biodiversity decline has started to exponentially increase, so has our ability to discover new, more effective nature-based cures, as species and habitats disappear before our eyes. Research estimates that in the marine environment, there's an estimated \$563 billion - \$5.69 trillion worth of potential cancer medicines to be discovered.⁵⁵ Could our relationship with our health be the answer? The pursuit of new, more effective antidotes to key illnesses could provide businesses and investors with opportunities to preserve our natural heritage. For the pharmaceutical industry, investing in biodiversity is good business - it adds to the bottom line.

The global botanical and plant-derived drugs market is expected to grow by \$13.67 billion between 2020-2024, progressing at a compound annual growth rate (CAGR) of 7% during the forecast period.⁵⁶ However, the pressure to deliver growing consumer demand for plant-based healthcare interventions is also creating pressure points in fragile ecosystems for the harvesting of these plant-based compounds. It's here that we can, again, look to innovations in agriculture, like the interface between vertical farming and hydroponics and pharmaceutical crops.⁵⁷ With regards to investing in healthcare for biodiversity outcomes there are key deliverables that need to be factored in to the decision-making process, none least the need to engage with indigenous peoples to preserve knowledge, and the implementation of the Nagoya Protocol⁵⁸ to ensure equitable sharing of the benefits associated with drug discovery. This is alongside the use of biodiversity and environmental impact assessments at site level and organisational level (especially given issues linked to water consumption, pollution and the use of inert ingredients linked with environmental degradation, such as palm oil).



54 www.cbd.int/article/pharmaceuticals-biodiversity-planet

55 www.sciencedirect.com/science/article/abs/pii/S0921800910003897

56 www.globenewswire.com/news-release/2020/12/08/2141450/0/en/The-Global-Botanical-and-Plant-Derived-Drugs-Market-is-expected-to-grow-by-13-67-bn-during-2020-2024-progressing-at-a-CAGR-of-7-during-the-forecast-period.html

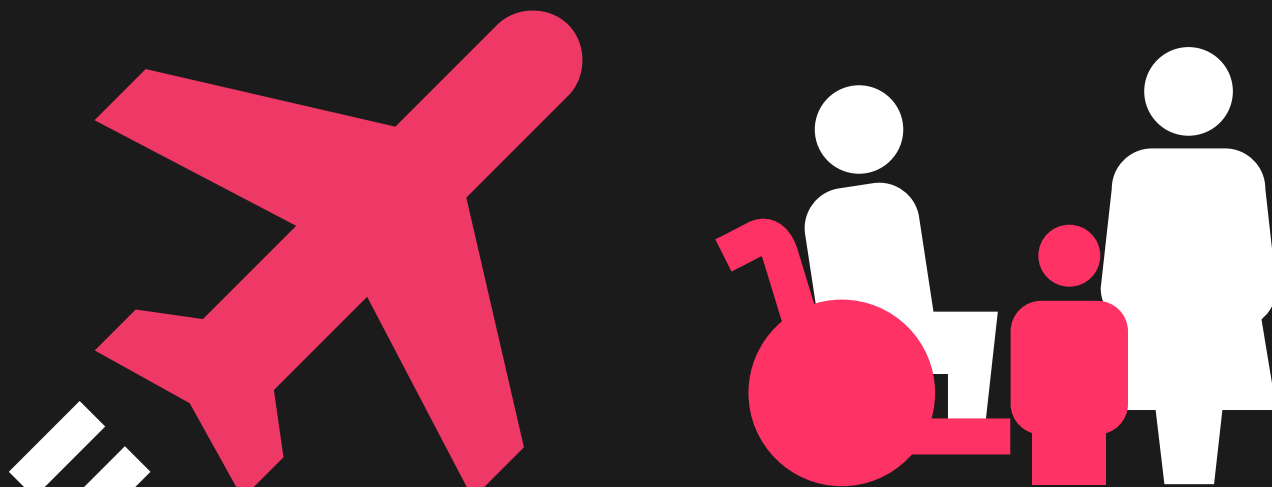
57 www.hortweek.com/uk-crop-health-body-webinar-hears-vertical-farming-future/fresh-produce/article/1756235

58 www.cbd.int/abs/

3. Lifestyle

Eco-tourism can be a much needed and beneficial contributor to the protection of our natural world, when done well. The global ecotourism market size was valued at \$185.87 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 15.2% from 2022 to 2030.⁵⁹ Highlighting the plight of our natural world and the critical need to preserve our fragile spaces and places is profoundly important as we work to shift consumer sentiment and behaviour. Linking fixed income instruments, for example, the provision of debt, to leading players in the intersect between conservation and eco-tourism can provide vital capital for improvement of protective measures, as well as land under active conservation stewardship. The World Bank recently moved into this space, structuring the world's first Wildlife Conservation Bond - a five-year \$150million sustainable development bond which will contribute to protecting and increasing black rhino populations in two protected areas in South Africa.⁶⁰ Thinking about how debt financing can be used to further support conservation efforts and deploying it, is one way investors can play a role in front line biodiversity protection; as much as direct investing in leading eco-tourism providers and their supply chains working at the interface between tourism and conservation. It's fair to say this is a nascent but hopefully growing space for investors to play a role in.

Fashion is also another interesting area for investors to interrogate. Fashion's links to climate are well documented, but often less so with regards to biodiversity. From water pollution to deforestation for farming, to soil loss and widespread use of chemical fertilisers and pesticides, fashion's impact is huge. The majority of the impacts stem from raw material production, material preparation and processing and end of life. According to a report by McKinsey,⁶¹ the five biggest contributors to biodiversity loss are cotton agriculture, woods based natural fibres / man-made cellulose fibres, textile dyeing and treatment, microplastics and waste. There are clear opportunities to invest to transition and improve fashion's footprint, and also support those working at the forefront of our new relationships with fashion; the use of resale as a service (RAAS) technology and blockchain for certifying provenance and footprint for example. As we wrote about in '**Fashion conscious**' the second-hand clothing market is a growth market. Innovations in low impact textiles also offer interesting investment opportunities. For example, Lyocell, a cellulose fibre made from gum trees, and Spinnova, made from wood pulp and agricultural waste, use zero waste and zero chemical approaches.



59 www.grandviewresearch.com/industry-analysis/ecotourism-market-report

60 www.worldbank.org/en/news/press-release/2022/03/23/wildlife-conservation-bond-boosts-south-africa-s-efforts-to-protect-black-rhinos-and-support-local-communities

61 www.mckinsey.com/industries/retail/our-insights/biodiversity-the-next-frontier-in-sustainable-fashion

4. Infrastructure

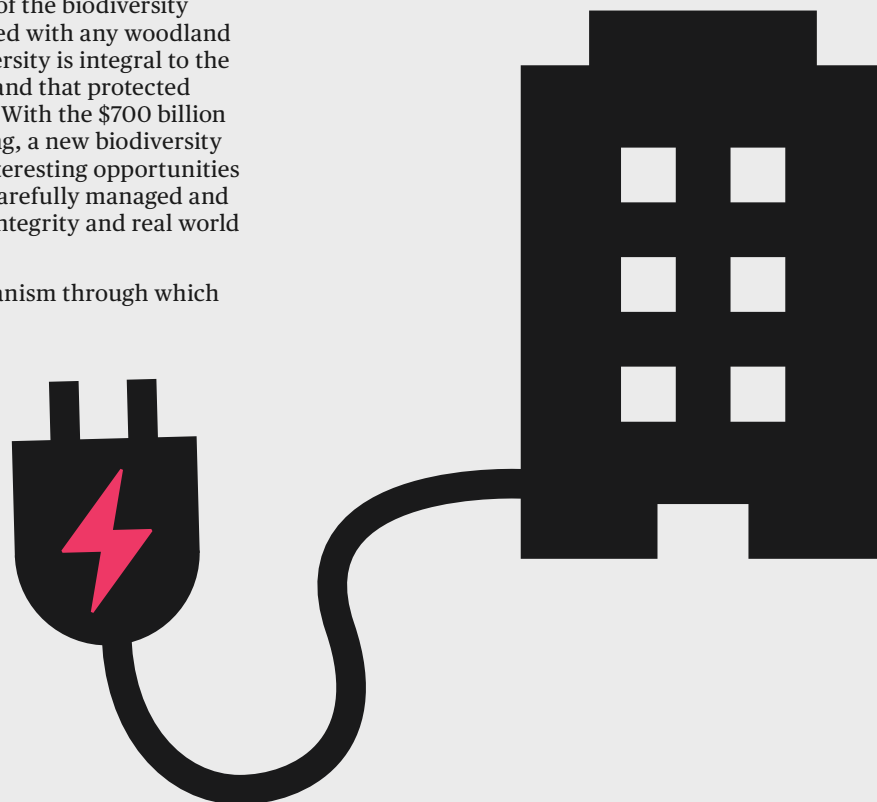
As we wrote in “**Investing in sustainable cities**” sponge cities and green cities afford excellent opportunities for investors to create spaces where people and nature co-exist and thrive. Urban environments don’t need to be concrete, tarmac and glass informed spaces, but places where people’s connectivity with the natural environment improves health outcomes. Urban planning, construction, recreation and, again, vertical farming, all present unique opportunities for an investor wanting to create imaginative, co-created spaces where nature underpins the infrastructure and planning decisions. Singapore is a leading example of what can happen when sustainability is prioritised into the integrated planning process.

Woodland is increasingly being seen as core infrastructure, along with rewilding, as part of an approach to regenerative agriculture. Commercial forestry can, however, come with many trade-offs, one of the most profound, and arguably perverse, being biodiversity loss as a result of monocropping. Investors in forestry must be acutely aware of the biodiversity and harvesting dynamics associated with any woodland investments to ensure that biodiversity is integral to the planting and harvesting regimes, and that protected areas are afforded full protection. With the \$700 billion financing gap⁶² for nature financing, a new biodiversity credit asset class could provide interesting opportunities for investors, but will need to be carefully managed and monitored to ensure robustness, integrity and real world positive outcomes.

Bio credits are also another mechanism through which

financing can be made available. However, like climate credits and offsets, there’s significant concern over whether they can be manipulated by those seeking to ‘polish’ their green credentials. New research by the UN⁶³ claims bio credits (different to offsets as they are purely positive in nature) could become hugely additive in driving finance into key conservation ecosystem protection activities.

Technology is another area for investors to familiarise themselves with. From hydroponics, to resale, to blockchain, to geospatial mapping and remote sensing for better decision making - the use of technology in biodiversity preservation is profound and represents a growing industry. Geospatial is one of the next big frontiers for businesses and investors, aiming to get better, live and more granular information on the state of fragile ecosystems and the environment at large - spatial finance is on the rise.⁶⁴



62 www.un.org/sustainabledevelopment/blog/2021/07/a-new-global-framework-for-managing-nature-through-2030-1st-detailed-draft-agreement-debuts/

63 iied.org/21216iied

64 www.forbes.com/sites/esri/2022/07/11/the-rise-of-spatial-finance/?sh=1adeed2e6bf2

Engaging in biodiversity

Investing in biodiversity requires careful consideration and patience due to the nascent revolution in integration of natural capital. The decline in biodiversity is dire, but not hopeless. As such, material risks for investors in nature-exposed companies exist and will become more prevalent over all time horizons, but opportunities in mitigating current pressures and understanding and securitising biodiversity are also rapidly appearing. This provides finance with a unique opportunity to step up and lean in to the provision of finance to address both the causes of the problems, as well as the solutions already at play.

As Rachel Carson suggested in her book **‘The Sense of Wonder’**,⁶⁵ there are two questions we should ask ourselves:

“What if I had never seen this before?”

“What if I knew I would never see it again?”

As investors, these two questions provide us with a unique stimulus to be making the right investment calls, no matter the residual and current challenges around data quality and availability. Now is the time we must all ask ourselves whether we’re happy to witness more destruction on our watch. The answer has to be no.

65 www.wob.com/en-gb/books/rachel-carson/sense-of-wonder/9780062655356

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