BRIEFING: **AUGUST 2025**

The Food Foundation

THE NATURE AND BIODIVERSITY COST OF OUR DIETS:

A recipe for extinction?

ABOUT THE FOOD FOUNDATION

The Food Foundation is an independent charity working to address challenges in the food system in the interests of the UK public. Working at the interface between academia and policymakers (parliamentarians, civil servants, local authorities, business leaders and investors) we use a wide range of approaches to make change happen including events, publications, media stories, social media campaigns and multistakeholder partnerships. We also work directly with citizens to ensure their lived experience is reflected in our policy proposals. We work with many partners on a range of different thematic areas, working closely with academics to generate evidence and campaigners who can drive change. We are independent of all political parties and business, and are not limited by a single issue or special interest.

Visit: foodfoundation.org.uk

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Conflict of interest declaration: The Food Foundation only accepts funding which does not compromise our independence. We do not take funding from food companies. Our policy is based on The Financial Relationship Policy developed by the World Obesity Federation to help us consider new financial engagements.

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Further technical information is available in this **annex.**

This briefing primarily aims to inform, promote discussion and debate, and support investors to hold food businesses to account for their nature and biodiversity impacts. It can also be used by investors, businesses and policymakers to support policy change towards a more sustainable and healthier food environment. This is part of a series of investor briefings; our previous briefings can be found **here**.

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CONTENTS

EXECUTIVE SUMMARY

We are completely and utterly reliant on the natural world for virtually everything we do. Human life at a very basic level can only exist thanks to the world around us, from the air we breathe, to the water we drink, and the food we eat. Nature and biodiversity are critical for both planetary and human health.

And yet we are facing a global crisis. The impact of human activity on the environment means we have already crossed six of the nine planetary boundaries required to safeguard our future (Richardson.K, et al, 2023), and we are currently in the middle of a sixth mass extinction event (World Wildlife Fund, 2022). The last mass extinction event recorded led to the extinction of the dinosaurs, yet this time round species extinction is being driven by human activity, with global wildlife populations having shrunk by an average of 73% in the past 50 years (World Wildlife Fund, 2024).

Food production and diets – particularly those high in animal-source foods – play a critical role in driving this catastrophic loss of biodiversity and nature. Our food system is severely damaging the planet, contributing heavily to both greenhouse gas emissions, nature and biodiversity loss, and exerting pressure on ecosystems in multiple, interlinked ways.

But rethinking what we eat and how we produce food has the potential to mitigate the harm current food systems are having on nature and the environment, as well as unlocking significant benefits for public health and the economy. Changing how we produce food and shifting diets towards more healthy and sustainable plant rich patterns ought to be a key strategy for ensuring the sustainability of our food supply and safeguarding our future.

This briefing therefore aims to summarise some of the risks posed to food businesses and their investors by nature and biodiversity loss, as well as providing suggestions as to the role investors can play in safeguarding nature and biodiversity through their corporate stewardship and financing activities.

KEY MESSAGES:

- The agricultural sector is almost entirely dependent on natural capital for its continued viability, yet it also contributes substantially to environmental degradation.
- The relationship between food production and biodiversity is bi-directional – not only can food production be damaging to biodiversity, but a loss of biodiversity can be damaging to food production.
- In the UK alone, nature loss is projected to reduce GDP growth by between 6% and 12% in the 2030s, which would be a decline greater than that caused by the 2008 financial crisis or the Covid-19 pandemic.
- Only 5% of companies across more than 20 industries currently assess their nature-related impacts, and less than 1% understand their nature dependencies.
- Consumption and production of livestock is driving widespread land use change and habitat destruction globally. In high income countries like the UK, changes in dietary patterns will be required as well as a shift towards more sustainable production practices to halt this.
- Shifting to plant-based diets in the UK could make a real difference, reducing by 58% the projected number of species projected to become extinct over the next 100 years as a result of what we are eating.

INTRODUCTION

Our current food system is a major driver of nature and biodiversity loss, exerting pressure on ecosystems in multiple, interlinked ways. These pressures illustrate how our food system is deeply entwined with nature loss and highlight the urgent need for systemic change:

- **Deforestation:** Large areas of forest are frequently cleared to make way for agricultural expansion, especially for crops like soy (used mostly for animal feed) and palm oil, or for grazing livestock, leading to habitat destruction and loss of biodiversity (United Nations).
- **Land use and conversion:** Agriculture, and animal agriculture in particular, is a key driver of land conversion from natural habitats, requiring extensive pastureland and feed crop cultivation, which often replaces natural habitats like grasslands, wetlands, and forests (UK Health Alliance on Climate Change, 2024)
- **Industrial livestock:** High-intensity livestock operations contribute significantly to water and air pollution through run-off of waste, antibiotics, and hormones, as well as emissions of ammonia and methane, which also affect climate systems (FAIRR, 2025).
- **Pesticide and fertiliser use:** Intensive farming practices rely heavily on chemical inputs, which pollute soils, rivers, and marine environments, and can harm non-target species including pollinators and aquatic life[1] (FAIRR, 2025).
- **Water usage:** Agriculture accounts for about 70% of global freshwater withdrawals, often leading to the depletion of rivers and aquifers, with severe consequences for both ecosystems and human communities (Carbon Brief, 2025).
- **Food waste:** Around a third of all food produced is wasted, which means vast amounts of natural resources are used unnecessarily, exacerbating environmental degradation without any nutritional benefits (European Environment Agency).

The 2021 Dasgupta report highlighted the economic dependency we have on nature, and PwC research shows that **over half the world's GDP is moderately or highly dependent on nature** (PwC, 2023). Yet biodiversity is declining at an unprecedented rate, with extinction rates 100 to 1,000 times above natural levels and rising. This rapid decline is weakening nature's productivity, resilience, and ability to adapt, posing major risks to economic stability and competitiveness, national security, and human well-being. The severe consequences of COVID-19 and other emerging infectious diseases – which can in large part be attributed to land-use changes and the exploitation of wildlife – serve as a warning of potentially greater threats if these trends continue (HM Treasury, 2021; World Economic Forum, 2025). Over the last few years, increasing attention has been paid by investors to the nature and biodiversity impacts of the food system, with the recognition of the need for an urgent shift towards more sustainable and healthier diets.

[1] *Eutrophication is the over-enrichment of water by nutrients from, for example, agricultural run-off. This can lead to harmful algal blooms, which among other things can harm aquatic life in affected areas (World Resources Institute, 2008).*

WHY NATURE AND BIODIVERSITY LOSS MATTER FOR HUMAN AND PLANETARY HEALTH AND THE WIDER ECONOMY

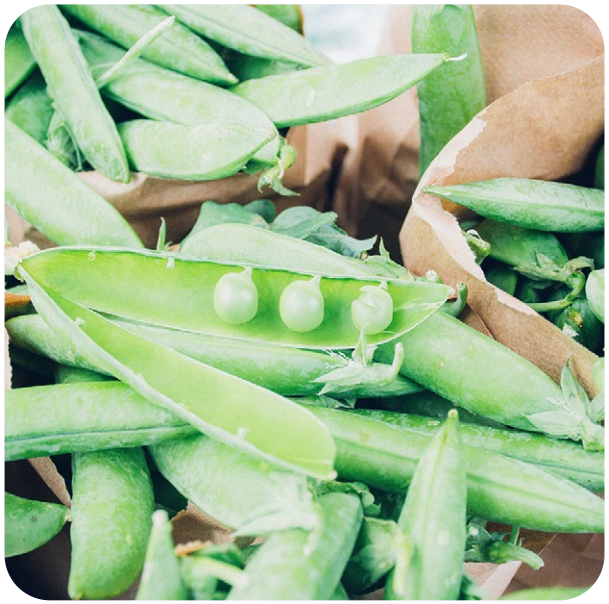
Why does nature matter for people, the government and the economy?

All communities, businesses and governments rely on ecosystem services to function. Nature (including biodiversity) contributes to human well-being in many ways, such as the tangible elements that support human life (like food or clean water), as well as non-tangible benefits like mental, emotional, or cultural well-being (Díaz, S. et al, 2018). And addressing the environmental impacts of our food system is crucial if the UK government is to meet its commitments to cut greenhouse gas emissions, protect 30% of UK land by 2030, halt wildlife decline by 2030 (UK Government, 2021) and forge a global deal on nature conservation (Harvey, F., 2024; Defra Environment Blog, 2024). A thriving economy and healthy environment must be viewed as two sides of the same coin. Nature and biodiversity loss are no longer "tomorrow's problem".

Because nature, society, and the economy are closely linked, environmental degradation also poses a direct threat to the financial health of all organisations. For financial institutions, the biggest impact on nature comes through the companies and clients they finance or support, who may significantly impact or depend on natural resources and ecosystem services in their operations or supply chains. These impacts and dependencies generate various risks – physical, transition, and systemic – that translate into financial risks for the institutions. For example, many food manufacturers and retailers have global supply chains directly reliant on the production of commodity crops in numerous countries, including many at high risk of biodiversity loss and climate change and who are already experiencing the related impacts. **In the UK alone, nature loss is projected to reduce GDP growth by between 6% and 12% in the 2030s, which would be a decline greater than that caused by the 2008 financial crisis or the COVID-19 pandemic** (Green Alliance, 2025). Yet in its 2025 Nature and Investors survey, Responsible Investor found that over 60% of investors said they do not have sufficient data to effectively measure the nature-related risks, impacts and dependencies (Gambetta, G., 2025).

A recent empirical study on biodiversity risks in asset pricing (based on US data) found that the risks of biodiversity and nature loss are increasingly being considered by investors. Companies with a large biodiversity footprint face a higher cost of capital than those with a lower footprint, particularly in sectors most vulnerable to the double materiality[2] of biodiversity risks. The research indicates that this trend has become more pronounced since 2021, driven by growing public awareness of biodiversity loss as well >

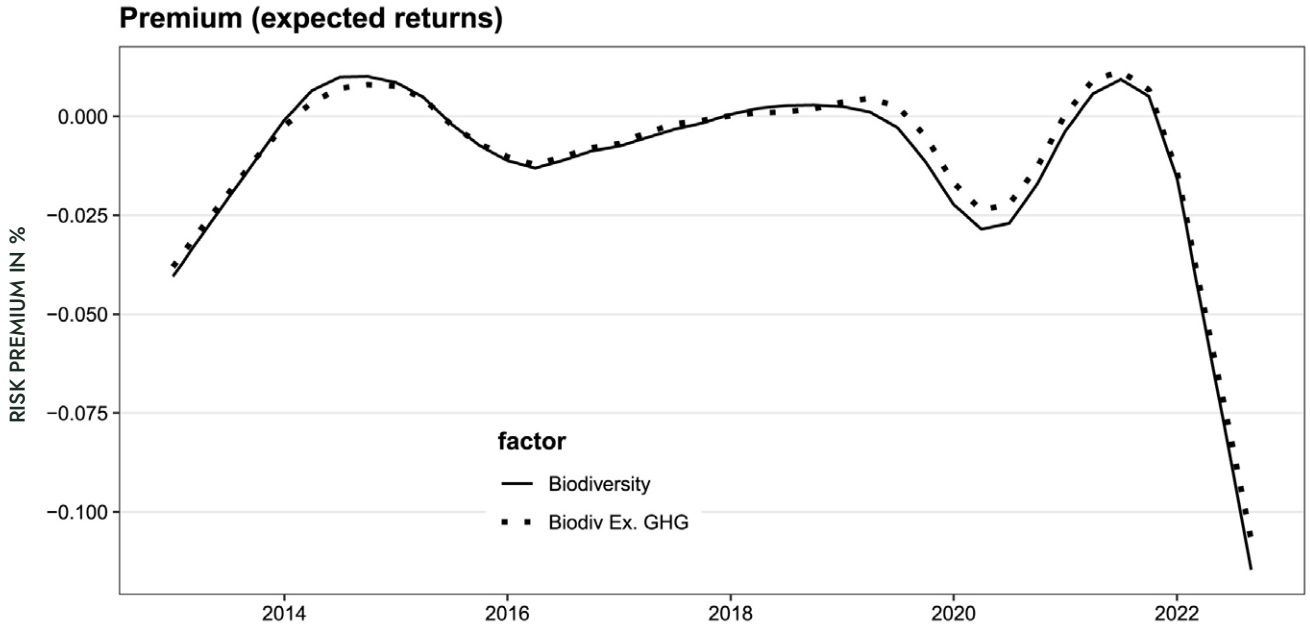
[2] *Double materiality is the approach of considering not only the financial implications of sustainability issues (like environmental degradation) on a company, but also a company's impact on the environment and society.*



> as increasing industry risk aversion. Both overall biodiversity risk and biodiversity risk excluding greenhouse gas (ex-GHG) prices remained relatively stable until 2021 but dropped significantly afterward, reaching -10% by 2022 (see figure 1). This shift aligns with rising concern over the risks posed by biodiversity loss and its influence on financial markets. The findings imply that investors now require a higher cost of capital for holding assets with large biodiversity impacts compared with lower ones in the highly exposed sectors (such as the agri-food sector) (Coqueret, G. et al, 2025). Investors are increasingly looking at nature-related risks and opportunities; however, it is currently too early to say definitively that there is financing allocation to these kinds of assets.

FIGURE 1: **US STOCKS' EXPECTED RETURNS IN INDUSTRIES HIGHLY EXPOSED TO BIODIVERSITY RISK OVER TIME**

The return expected each year from US stocks in industries that are highly exposed to double materiality biodiversity risks, for both overall biodiversity and biodiversity excluding greenhouse gas (ex-GHG) factors. This shows a sharp drop in expected returns for those companies exposed to a high level of biodiversity risk from 2022 onwards.



Source: Coqueret, G. et al, 2025

The systemic effects of nature loss pose serious threats to economic stability with severe consequences for companies, financial institutions, and society as a whole (ShareAction, 2025; Green Alliance, 2025). Climate change and biodiversity loss are already contributing to financial instability, thereby further threatening economic prosperity. The climate crisis and nature loss are deeply interconnected, making efforts to halt biodiversity decline critical for effective climate action and resilience.

Why nature and biodiversity loss matter for food security, food businesses and their investors

Current food production and consumption, and agriculture practices harm wildlife and natural ecosystems, threatening 70% of terrestrial vertebrate species (House of Lords Library, 2022; Eyres, A. et al, 2024). The relationship is bi-directional – not only can food production be damaging to biodiversity, but a loss of biodiversity can be damaging to food production. A reduction in species of plants, animals and micro-organisms that are involved in food production, such as in pollination and soil fertility, can reduce yields, posing a major threat to food security. Furthermore, climate change and biodiversity loss both pose serious risks to food security by increasing extreme weather events and reducing harvests (National Farmers' Union, 2024). This is already making some assets and regions uninsurable, for instance many vineyards in California are now struggling to find insurance for their property and business (Irwin, N., 2025; American Vineyard Magazine, 2024; Wine Business Monthly, 2025). To help address this, the Kunming-Montreal Global Biodiversity Framework (GBF) recommends enhancing biodiversity in agriculture through, for example, agroecological approaches and conserving and restoring biodiversity (Convention on Biological Diversity, 2022).

Corporate land use is the largest driver of biodiversity loss – primarily through land use changes and habitat destruction – with the most significant impacts stemming from sectors related to food consumption, manufacturing, housing, and clothing. Notably, the agricultural sector is almost entirely dependent on natural capital for its continued viability, yet it also contributes substantially to environmental degradation; for instance, livestock raised for human consumption now far exceeds the biomass of wild birds and mammals (Coqueret, G et al, 2025; J.P. Morgan Asset Management, 2024).

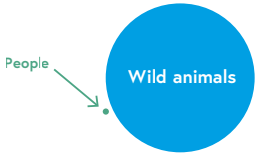
As humanity is dependent on food production and consumption for its very survival, by extension the viability and prosperity of the whole economy – and not just investors in food businesses – is dependent on efficient and sustainable management of natural capital.

WHAT DO WE MEAN BY NATURE AND BIODIVERSITY?

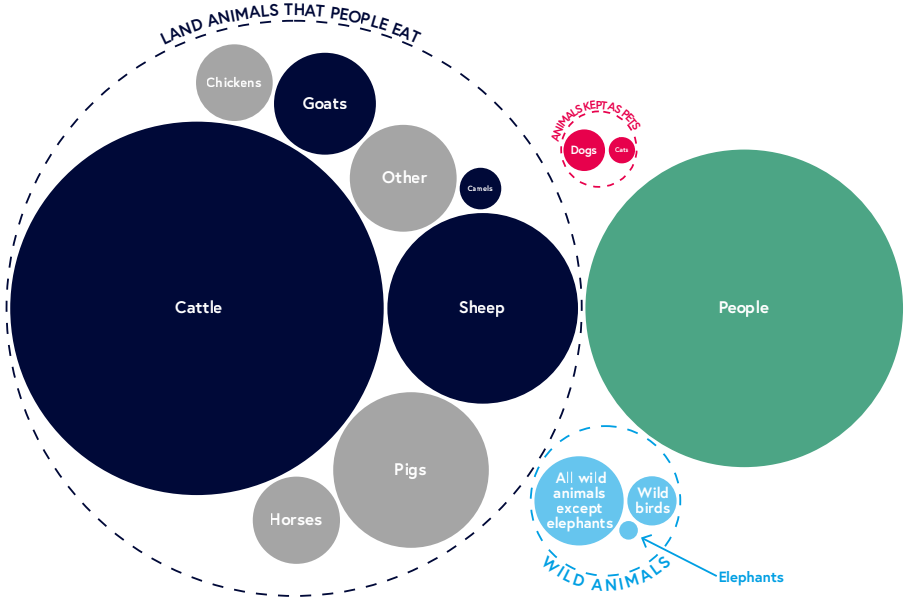
Nature and biodiversity are terms that often used interchangeably. According to the Convention on Biological Diversity (CBD), "*biodiversity is 'the variability among living organisms from all sources…this includes diversity within species, between species and of ecosystems'*." In short, biodiversity is the living component of nature, whereas nature encompasses everything that exists naturally, including both living things and non-living elements like landforms, oceans, climate and so on (Convention on Biological Diversity, 2024).

FIGURE 2: **THE GLOBAL MASS OF FARM ANIMALS COMPARED WITH WILD ANIMALS, DOMESTICATED ANIMALS AND HUMANS**

LAND ANIMALS BY MASS: **11,000 YEARS AGO**



LAND ANIMALS BY MASS: **PRESENT**



Source: National Food Strategy analysis based on: Bar-On, Y. M., Phillips, R., & Milo, R. (2018). The biomass distribution on Earth, Proceedings of the National Academy of Sciences, 115(25), 6506-6511 [online]; National Food Strategy, 2021

Note: for this visualisation 'animals' refers to terrestrial vertebrates. Terrestrial invertebrates and all life in the oceans are excluded.

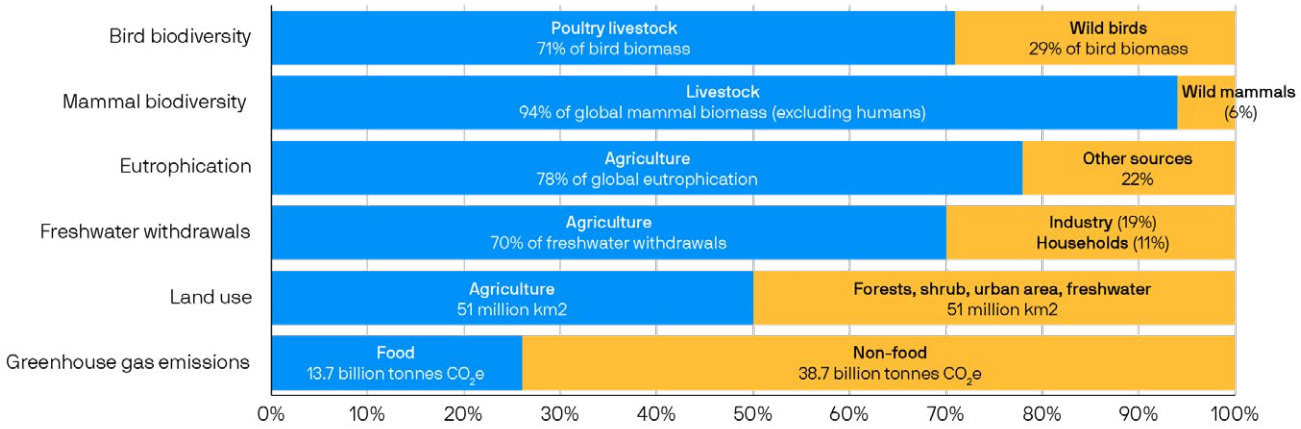
THE LACK OF GENETIC DIVERSITY IN OUR CURRENT FOOD SYSTEM

- 75% of the world's food supply relies on just 12 plant and five animal species. Of these, just three (rice, maize, and wheat) provide nearly 60% of all plant-based calories consumed in the human diet (WWF, 2019).
- Since 1900, 75% of agricultural plant genetic diversity has been lost; for example, in Thailand rice varieties have dropped from 16,000 to just 37 (WWF, 2019).
- In the last 100 years, the varieties of cabbage, pea and tomato have decreased by 80% in the US (WWF, 2019).
- Bananas – particularly the Cavendish variety that makes up almost the entirety of global banana production – are clones and cannot reproduce on their own. Their lack of genetic biodiversity makes them highly vulnerable to pests and diseases, which are exacerbated by environmental degradation (McHale, E., 2020).
- WWF has produced a list of "50 foods for healthier people and a healthier planet, consisting of vegetables, grains, cereals, seeds, legumes and nuts from across the globe, to inspire greater variety in what we cook and eat" (WWF, 2019).

FOCUS ON POLLINATORS

Bees and other pollinators – such as butterflies, bats, and beetles – play a critical yet often silent role in sustaining biodiversity, food production, and resilient agrifood systems. They enable the reproduction of most of the world's food crops and wild plants, support rural livelihoods, and maintain ecological balance. 87 out of 115 of the world's leading food crops, and almost 90% of the world's wild flowering plants – around 308,000 species – rely on pollinators for their reproduction. However, their populations are under severe threat due to habitat loss, harmful agricultural practices, pests, and climate change. Without pollinators, food scarcity, malnutrition, and economic instability could worsen, especially in vulnerable regions. Protecting pollinators is essential for food security, ecosystem health, and climate resilience (Yasmi, Y., 2025).

FIGURE 3: **THE ENVIRONMENTAL IMPACTS OF FOOD AND AGRICULTURE**



Source: Our World in Data, J.P. Morgan Asset Management, 2024

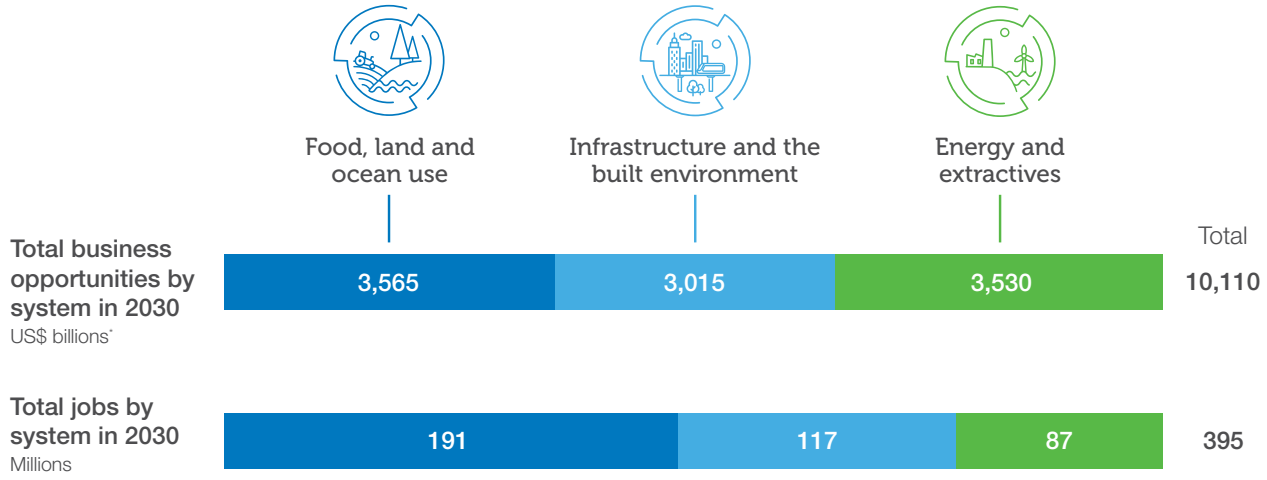
Blue denotes the direct impact of food and and agriculture.

The cost of failing to address the biodiversity crisis now exceeds the cost of taking action

The agri-food sector, currently valued at about $4 trillion USD, is the sector most dependent on nature and yet perversely it is also the primary driver of nature and biodiversity loss. Harmful production and consumption practices are reinforced globally by the current subsidy system, which are estimated to cause $4-6 trillion USD in environmental damage annually (FAIRR, 2024; HM Treasury, 2021).

However, recent reports highlight that **acting swiftly to protect nature and tackle the biodiversity crisis could create significant business and innovation opportunities**, estimated at $10 trillion in value and 395 million jobs globally by 2030. In contrast, postponing action by just ten years could double today's intervention costs (European Commission, 2024; Green Alliance, 2025). The financial costs of nature degradation are already materialising, and mitigating these costs is also an overlooked financial opportunity. However, the investment in nature-based solutions falls far short of what is needed; the United Nations Environment Programme (UNEP) has said that to meet international targets global investment in nature-based solutions must reach $737 billion USD per year by 2050. The good news is that the amount of investment required is significantly lower than the current estimated costs of environmental damages ($737 billion USD vs $4-6 USD trillion annually, respectively).

FIGURE 4: **TOTAL BUSINESS OPPORTUNITIES AND JOBS FROM HALTING AND REVERSING NATURE LOSS**



Source: World Economic Forum, 2020

There are plenty of opportunities to be had from transforming the food system throughout the whole value chain. From solutions focused on land use, production, agri-tech innovations, regenerative, deforestation-free and precision agriculture, water and waste management, not to mention improved business efficiencies and practices, resilience and innovation – companies with high nature dependencies stand to gain from these nature-positive opportunities (J.P. Morgan Asset Management, 2024; BlackRock Investment Stewardship, 2025).

Another important opportunity is the shift towards more plant-rich diets. Diversifying consumption patterns away from high intakes of less healthy foods and animal-source products, and increasing intakes of plant-rich foods, has climate, nature and health benefits. This includes a reduction in the cost of unhealthy diets, which the United Nations Food and Agriculture Organization has recently estimated at $9 trillion USD globally and which is linked to the healthcare costs of obesity and other non-communicable diseases, as well as the cost of lost productivity (J.P. Morgan Asset Management, 2024).

Recent studies looking specifically at transforming food systems to be healthier and more sustainable while providing decent livelihoods have suggested that the net benefits could be worth between $4.5 and 10 trillion annually (Ruggeri Laderchi, C. et al., 2024; Food and Land Use Coalition, 2021). Again, this highlights that the upfront costs of taking immediate action on nature and biodiversity would likely be dwarfed by the return on investment and savings from mitigating wider health, social and environmental damages. However, this will require more sustainable use of natural resources and investment, and to date there has been very little capital invested in improving natural capital management in the food system (J.P. Morgan Asset Management, 2024; BlackRock Investment Stewardship, 2025).

THE IMPACT OF DIETARY PATTERNS ON BIODIVERSITY EXTINCTION RISK

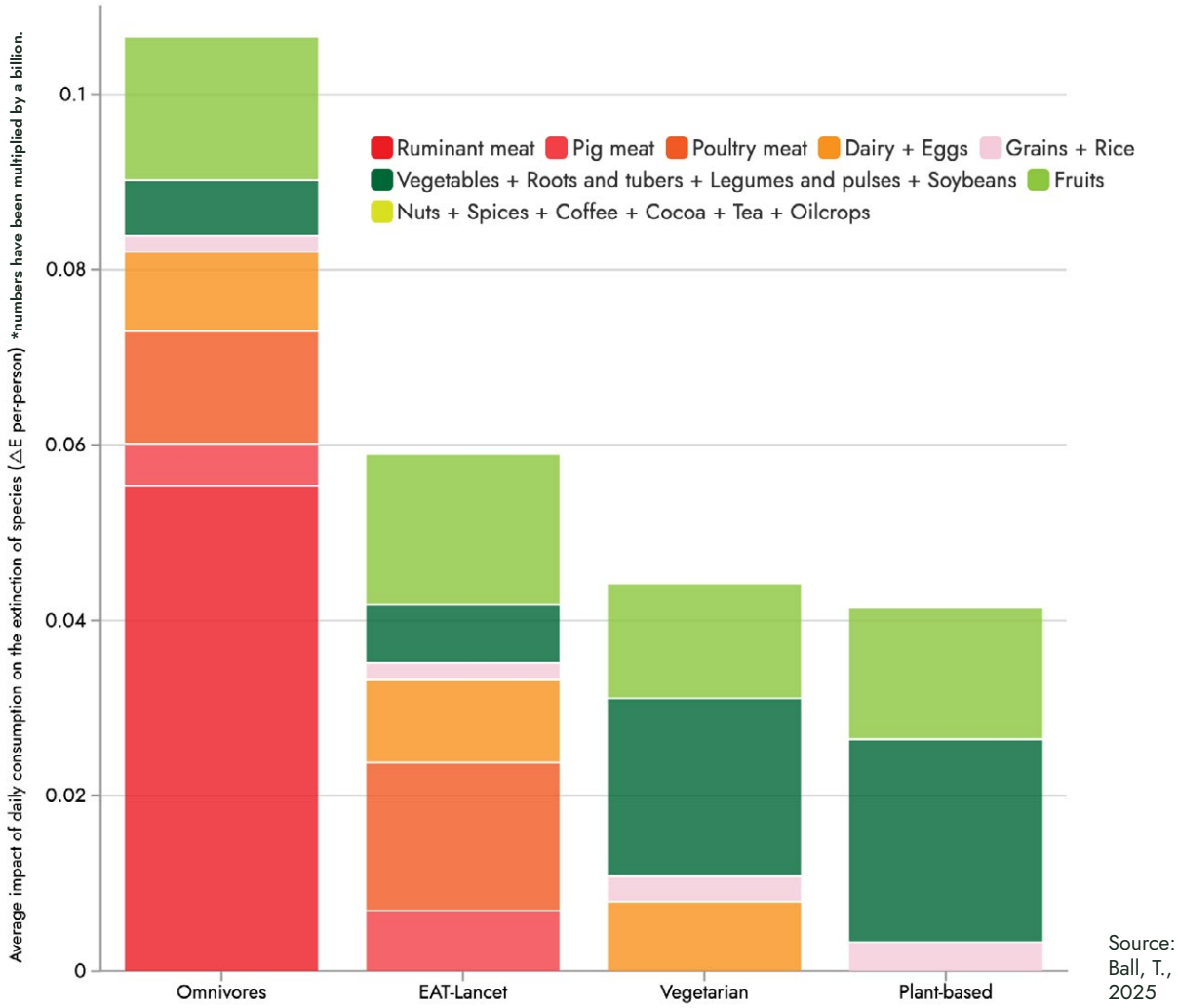
Changes in land use, habitat destruction, and intensive agricultural practices are accelerating species extinction. Current UK dietary patterns, especially the consumption of red or ruminant meats like beef and lamb, are directly linked to increased extinction risks for numerous species (House of Lords Library, 2022).

Analysis by the Mandala Research Consortium into the impact of land use on approximately 30,000 vertebrate species has identified that current UK diets are putting species globally at risk of becoming extinct, in large part driven by the consumption of ruminant meat. However, **shifting to plant-based diets could reduce the projected number of extinctions linked to current dietary habits by 58%**[3].

While meat can form part of a balanced diet, climate and health organisations globally are agreed that in high income countries like the UK we need to be eating less meat than we currently do (IPCC, 2023; World Health Organization and Food and Agriculture Organization of the United Nations, 2019). In the UK, the 2021 independent National Food Strategy for England recommended a 30% reduction in UK meat consumption by 2032 in order to meet both climate and health goals, while the Climate Change Committee has recommended the UK reduce meat consumption by 25% by 2040 and 35% by 2050 to remain on track to meet climate targets. As well as the GHGE reduction potential of reducing meat consumption, these data show that eating less meat is also necessary to minimise the impact of our diets on species extinction and protect our planet's biodiversity.

[3] *This is likely to be an underestimate as not all assumptions that could affect species extinction at this scale have been factored into the model.*

FIGURE 5: **THE EXTINCTION IMPACTS OF AVERAGE DAILY PER-PERSON FOOD CONSUMPTION IN THE UK FOR CONSUMPTION IN 2024**



Source: Ball, T., 2025

The Mandala research team estimate that, globally, almost 700 species of vertebrates are likely destined for extinction within 100 years due to current agricultural land use alone – a figure that excludes additional biodiversity threats from agriculture such as chemical pollution and greenhouse gas emissions, among others.

What is the mitigation potential of simple dietary changes?

There is significant scope for reducing the harm to nature by changing consumption patterns towards more plant-rich diets. Studies around the world on the extinction impacts of food groups show that eating animal products, especially ruminant meat, has a disproportionate impact on species extinction risk (Ball et al., 2025; Durazzo, 2019; Tilman et al., 2017). In recent decades, 65% of agricultural expansion has been associated with increased production of animal products, and land-use changes associated with animal husbandry account for about 30% of current global biodiversity loss. Heavily managed and densely stocked pastures pose serious threats to biodiversity (Henry et al., 2019), and soy production, a primary ingredient in livestock feed, is a key driver of forest and biodiverse ecosystem loss in South America (Goldman et al, 2020).

Whilst farming livestock less intensively and using more regenerative methods are important, they are not a realistic solution with current levels of livestock and meat consumption. It is true that certain grazing methods on pasture can deliver environmental benefits, including improvements in soil health and biodiversity; however, there is simply not enough land available globally to farm the current livestock population in this way. The evidence shows that it will not be possible to reach climate and nature targets without producing and consuming less meat and reducing livestock numbers (Climate Change Committee, 2025).

SPOTLIGHT ON BEANS

Beans are good for the planet. They use less water than other crops and also bring benefits to the soil in the areas they are grown. They can help to fix nitrogen into the soil and protect soil microbes, increasing and extending the productivity of farmland, reducing the need for synthetic fertilisers and improving crop rotation – all of which makes them a valuable tool in more sustainable farming practices. Beans also have a comparatively low carbon footprint; producing 1kg of beans emits around 2kg of CO_2e while 1kg of beef from a non-dairy herd produces 100kg of CO_2e (The Food Foundation, 2024a; SDG2 Advocacy Hub, 2024).

The horticulture industry in the UK is currently worth over £5bn a year, employs over 50,000 people and offers opportunities for growth, yet is often overlooked (The Food Foundation, 2025e). The Food Foundation is calling on the government to deliver an ambitious edible horticulture growth plan for British farmers and growers across all of the devolved nations for an expanded, vibrant, and thriving horticulture sector. This would support the production and increased consumption of plant foods, including beans as well as fruit and vegetables, that can be grown in the UK, and ensure the UK is not unsustainably reliant on imports.

The impact of trade deals on biodiversity and nature loss

The Mandala analysis also found that the vast majority (92%) of the impact of UK diets on species extinction occurs overseas due to the high volume of animal products that are imported into the UK from other countries. For example, some of our beef and lamb is produced in Australia and New Zealand (Figure 6), which increases the risk of species extinction linked to UK diets (British Meat Processors Association, 2025). In many countries we import meat from, ruminant production is fairly concentrated in areas with high biodiversity (higher than the biodiversity of areas in the UK used for livestock farming), and so many of the animal species at risk exist only in that part of the world. This highlights the imperative of ensuring that trade deals that are being or have been recently negotiated (such as those with the EU, USA and India most recently signed by the current UK government) do not enable imports of more meat, as this will simply offshore the nature and biodiversity loss risks of the food we eat elsewhere.

FIGURE 6: **THE TOP EU AND NON-EU COUNTRIES THE UK IMPORTS RED MEAT FROM**

	Fresh and frozen				Processed			
	EU		Non-EU		EU		Non-EU	
Beef & veal	Ireland	81%	Australia	25%	Ireland	52%	Brazil	99%
Lamb & mutton	Ireland	86%	New Zealand	69%	Ireland	53%	n/a	n/a
Pork	Denmark	24%	USA	66%	Netherlands	43%	USA	80%

Source: The Food Foundation, 2025d

IMPROVING BIODIVERSITY METRICS AND WHAT THESE TELL US ABOUT PRIORITIES FOR HABITAT CONSERVATION

Human-driven habitat loss is widely recognised as the leading cause of biodiversity decline, yet we still lack reliable, spatially detailed metrics that clearly link habitat change to species extinctions. Reliable biodiversity metrics are crucial for tracking changes over time and informing conservation efforts. To be truly effective, these metrics need to be representative, consistent, and scalable. This means they should reflect a broad range of geographic regions, species groups, and habitat types. It is also important that they enable comparisons across different locations and clearly indicate the direction of biodiversity change to help evaluate impacts and set priorities. Additionally, these metrics should be flexible enough to be aggregated or disaggregated by species or ecosystems to address the needs of various stakeholders. Finally, they must deliver actionable insights at different scales without requiring complex, additional analysis (Eyres, A. et al, 2024).

To address this, the LIFE (Land-cover change Impacts on Future Extinctions) metric has been developed at Cambridge University's Conservation Science Group, covering 29,772 terrestrial vertebrate species. The Group has developed maps that offer the first quantitative estimates of how expected extinction numbers change due to two key land-use transitions: (1) converting remaining natural vegetation into agricultural land and (2) restoring agricultural areas back to natural habitats. LIFE scores have multiple applications, such as measuring the effects of land-cover change, supporting conservation planning efforts, and estimating the extinction footprint associated with different products. These maps could be used by investors as part of their company-level biodiversity-related assessments, and wider stewardship and financing activities (Eyres, A. et al, 2025.).

LIFE scores show that the biodiversity losses from converting natural habitats to other land uses are generally larger and more widespread than the gains achieved through habitat restoration. This suggests that **protecting existing natural areas is more effective for conserving biodiversity than attempting to restore habitats after they've been altered**. LIFE score maps consistently highlight similar key regions – mainly biodiversity-rich areas in the tropics and subtropics – as priorities for both habitat conversion and restoration (Eyres, A. et al, 2025).

FOOD AND REGULATORY FRAMEWORKS

There are a number of regulatory frameworks for nature and biodiversity. The key mandatory ones are: the Convention on Biological Diversity (CBD), under which the **Kunming-Montreal Global Biodiversity Framework** (GBF) sits; the EU **Nature Restoration Regulation**; the EU Deforestation Regulation; the EU's Corporate Sustainability Reporting Directive (CSRD) and Corporate Sustainability Due Diligence Directive (CSDDD); England's **Environment Act 2021** and **related regulations**; and the expected UK Forest Risk Commodities regulations. There are also several voluntary frameworks currently in use or being developed, notably: the Taskforce on Nature-related Financial Disclosures (TNFD); the Science Based Targets Network (SBTN) science-based targets for nature; and the UK's Food Data Transparency Partnership (FDTP).

While biodiversity regulatory frameworks are essential for conservation efforts, they often don't fully capture the nuances of food systems. These frameworks typically emphasise protecting ecosystems and species but may overlook how food systems specifically contribute to biodiversity loss. They tend to focus on species diversity without fully considering food diversity, including genetic variety within crops (Chatham House, 2021; UNEP, 2021). Reduced genetic diversity makes crops more susceptible to disease and weakens their resilience, lowers dietary quality, and harms vital ecosystem functions like natural pest and disease regulation (UK Health Alliance on Climate Change, 2024).
Although agricultural practices may be included, the impact of consumption habits on land use and therefore nature loss, particularly diets high in animal products, can be under-addressed. Likewise, food waste is not always prioritised, meaning that vast amounts of natural resources are used unnecessarily, exacerbating environmental degradation without any nutritional benefit. To tackle food-related biodiversity loss effectively, in view of the food system's significant impact on nature and biodiversity loss, these frameworks ought to consider a holistic food systems approach that takes into account the entire food chain, from production to consumption, and the interconnections (UK Health Alliance on Climate Change, 2024; Johns, T., 2022).

That being said, there have recently been some encouraging efforts to take a more food systems approach. The United Nations Food Systems Summit noted the need for food and agriculture to be integrated into existing mechanisms, such as National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs), and National Biodiversity Strategies and Action Plans (NBSAPs). And at COP28 in 2023 130 countries signed the Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action which committed them to including food and land use targets in their NDCs and NAPs. In addition to this, some national governments are making use of fiscal measures to spur food systems transformation, like Denmark who in mid-2024 introduced a carbon tax on the agriculture sector – including livestock – with any revenue generated earmarked for rewilding initiatives (Invest in Denmark, 2024). Having these kinds of long-term, consistent policy commitments from governments is key for investors looking to make long-term investment decisions (J.P. Morgan Asset Management, 2024).

WHAT FOOD BUSINESSES CAN DO BETTER ON NATURE AND BIODIVERSITY

Research has shown that companies with strong corporate governance also perform well on sustainability matters. The World Benchmarking Alliance has highlighted that **although 66% of businesses have board-level oversight of sustainability matters, only 2% have board-level expertise on biodiversity or climate**. Therefore, companies should look to ensure there is board-level expertise and oversight of nature and biodiversity issues (World Benchmarking Alliance, 2024).

Worryingly, according to the World Benchmarking Alliance, only 5 % of companies across more than 20 industries assess their nature-related impacts, and less than 1% understand their nature dependencies. Businesses should have a clear idea of the steps they need to take to improve traceability and manage their nature and biodiversity-related risks and impacts, and how long those steps will take. Companies should look to develop strategies to address nature loss and disclose their nature and biodiversity risks, impacts, dependencies and opportunities, aligned with international frameworks such as the TNFD, so that investors can have improved visibility and more accurately assess which companies in their portfolios are better managing these.

Executive remuneration should be linked to the successful delivery of the company's long-term strategy (which should cover nature and biodiversity), so that businesses can link remuneration and bonuses to performance against nature and biodiversity commitments and targets (The Food Foundation, 2024d). And sustainability leaders in businesses should speak with the risk management departments who are responsible for purchasing the organisation's insurance policies, to ensure shared understanding of nature and biodiversity risks facing the company.

Spotlight on M&S: According to our 2024 Plating Up Progress benchmark, M&S perform well on biodiversity. They have achieved 98% Roundtable on Sustainable Palm Oil certified palm oil in own-brand food, aiming for 100% by 2025/26. They have a target for deforestation- and conversion-free soy in animal feed by 2025. All of their beef is UK or Ireland-sourced and fully traceable. Their cocoa is already deforestation- and conversion-free and Fairtrade certified, as are all of their tea and coffee across both their retail products and cafés. They could strengthen their position further by ensuring all their soy is sourced from deforestation- and conversion-free supply chains, and by setting targets to increase plant protein sales as a proportion of their total protein sales (The Food Foundation, 2024b).

ENGAGEMENT QUESTIONS FOR INVESTORS

Investors should reframe their understanding of nature not as an externality but as an asset to be valued, accounted for and invested in. Short-term investor returns should be considered against the importance of nature and biodiversity upon which a healthy economy, society and longer-term investors' returns depend. (Green Alliance, 2025). For financial institutions looking to assess their nature and biodiversity-related impacts and dependencies, they ought to have internal dialogues with key teams, engage with peers in the financial sector and in civil society to share best practice, and report on experiences and progress to drive collective efforts on halting and reversing nature and biodiversity loss (ShareAction, 2025).

The following engagement questions are intended to provide some suggestions as to the types of questions that could be asked by investors in their stewardship and engagement with food and beverage companies on their nature and biodiversity-related risks, impacts, dependencies and opportunities.

- How is the company holistically addressing climate, nature and health challenges?
- To what extent is the company engaging with stakeholders on nature and biodiversity-related matters, including throughout its supply chain and with local communities impacted by the company's natural capital use?
- How have the financially-material nature and biodiversity-related risks, impacts, dependencies and opportunities (including location-specific details of the company interactions with nature) been identified for the company's business model and financial planning, and how have the increasing stresses to natural capital been evaluated, anticipated and integrated into the risk framework? How do these risk exercises influence the company's business strategy?
- What scenario planning is the company doing to forecast the impact of nature and biodiversity-related risks in the company's sourcing regions on the resilience of different categories' business models?
- Has the company forecast its ability to pass on costs from declining yields, quality, and security of supply in its sourcing regions? If so, what do these forecasts show?
- Is the company acting to produce and implement comprehensive nature-related transition plans, integrated with climate and aligned with science? Has the company set metrics and targets (short, medium and long-term) for managing nature and biodiversity-related matters, and how do they monitor these to assess progress and identify efficiencies?
- To what extent has the company considered the crossover impacts between sales of animal-source foods (such as meat and dairy) and nature loss? What steps is the company taking to manage these impacts (e.g. setting plant-based foods sales targets)?
- How is the company planning for any changes in reporting requirements on nature and biodiversity-related matters, including throughout its supply chain?
- What is the board's role in overseeing the company's strategy in relation to nature and biodiversity-related risks, impacts, dependencies and opportunities?
- To what extent are executive remuneration and bonuses linked to performance against nature and biodiversity commitments and targets?

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