



Federated Hermes Biodiversity

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For professional investors only.

BIODIVERSITY – Why now?

The importance of biodiversity

- **Nature is critical to human life but it is under increasing stress – because of us**

- Variety in animals, plants, fungi and even microorganisms like bacteria is vital for the survival of ecosystems
- Ecosystem “services” are critical in provision of clean air, water, food, healthy soils, pollination
- Nature helps save lives – many medicines, especially anti-infectives and anti-cancer agents, originated from plants, fungi or bacteria
- Healthy forests help to stabilize our climate, clean the air, and guarantee water supply
- 70% of the Earth is covered with water; without ocean there is no life
- Biodiversity and ecosystem services are the basis of our economies and societies; value estimated at **\$120-145 trillion per annum or 1.5x value of global GDP**

- Human activity, such as consumption and energy needs, has severely altered **75%** of the earth’s surface and 66% of the marine environment

- Average species population sizes fell by 68% between 1970 and 2016, with some Australian populations plummeting by 97%

- **1 million** wildlife species and one in five plant species are threatened with extinction

- Such is the human impact on nature, scientists believe we are now entering a new geological epoch, the

Anthropocene

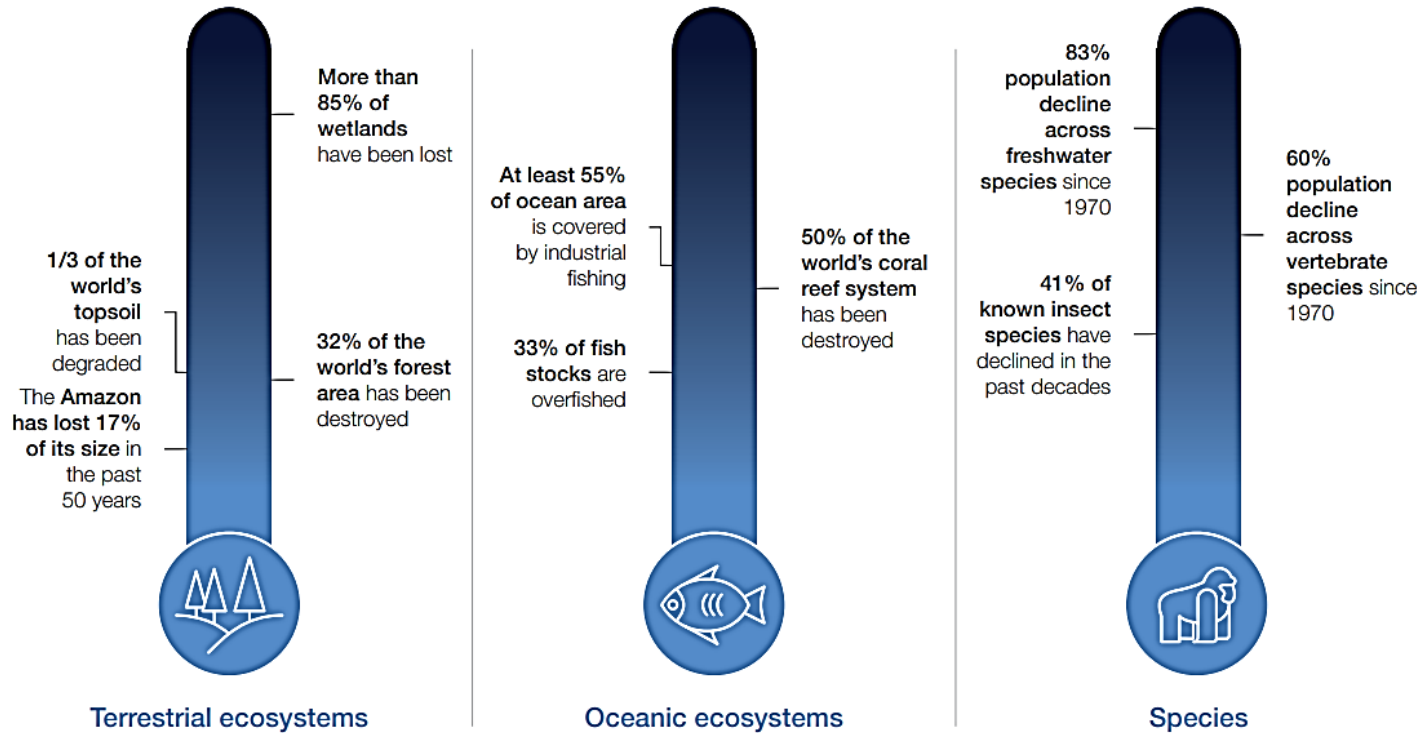
- **60%** of emergent infectious diseases come from animals. Unsustainable agriculture and increased exploitation of wildlife is contributing to the emergence of zoonotic diseases, such as Covid-19

- It is estimated that damage to our eco-systems and the associated loss of biodiversity could represent risk to global economy of

**\$10tn
by 2050**

Human activity is eroding the world's biodiversity

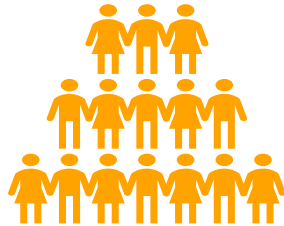
FIGURE 1:
Human activity is eroding the world's ecological foundations



Source: IPBES, 2019, "Global assessment report on biodiversity and ecosystem services"; Maria-Helena Semedo of the Food and Agriculture Organization (FAO) at World Soil Day 2014; The Economist, 2019, "On the brink – The Amazon is approaching an irreversible tipping point"; WWF, 2018, "Living planet report – 2018: Aiming higher"; F. Sánchez-Bayo and K.A.G. Wyckhuys, 2019, "Worldwide decline of the entomofauna: A review of its drivers", Biological Conservation.

Homo sapiens – the global crisis

2022



8 billion

2050



10-12 billion

Food

- Each year 80 billion land animals are killed for food
- Unsustainable agriculture is the main cause of deforestation

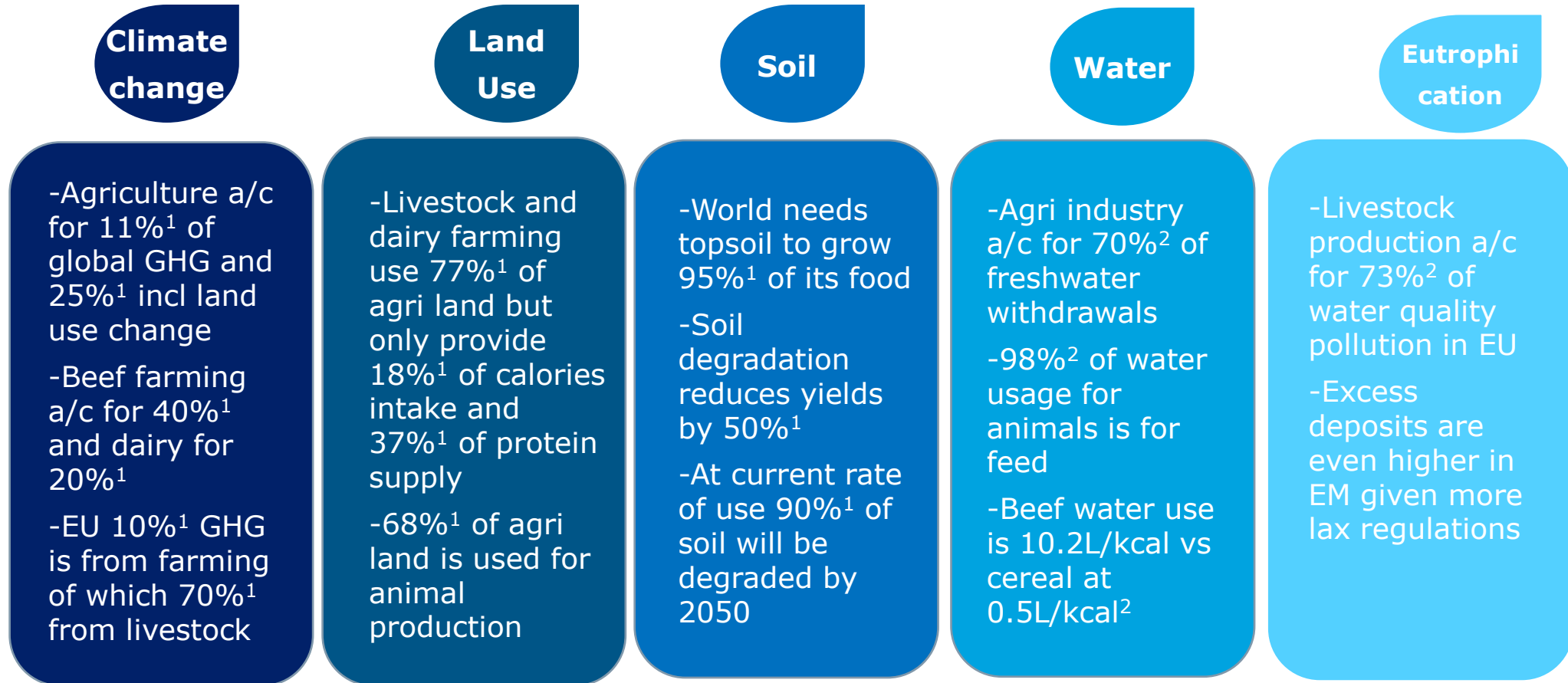
Energy

- Energy demand to increase by 50% by 2050
- Renewables accounted for 29% of total energy consumption in 2020

Water

- Global water usage: 70% agriculture, 20% industry, 10% domestic
- By 2050 c 6bn people will not have access to clean water

Food production – the chain reaction





**IF HUMANS KILLED EACH
OTHER AT THE SAME
RATE THAT WE KILL
OTHER ANIMALS...**



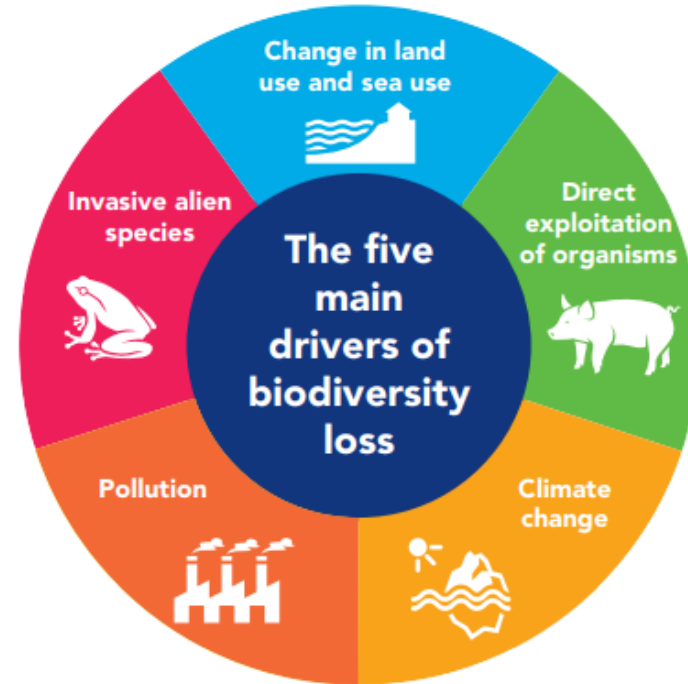
**WE'D BE EXTINCT IN 17
DAYS**



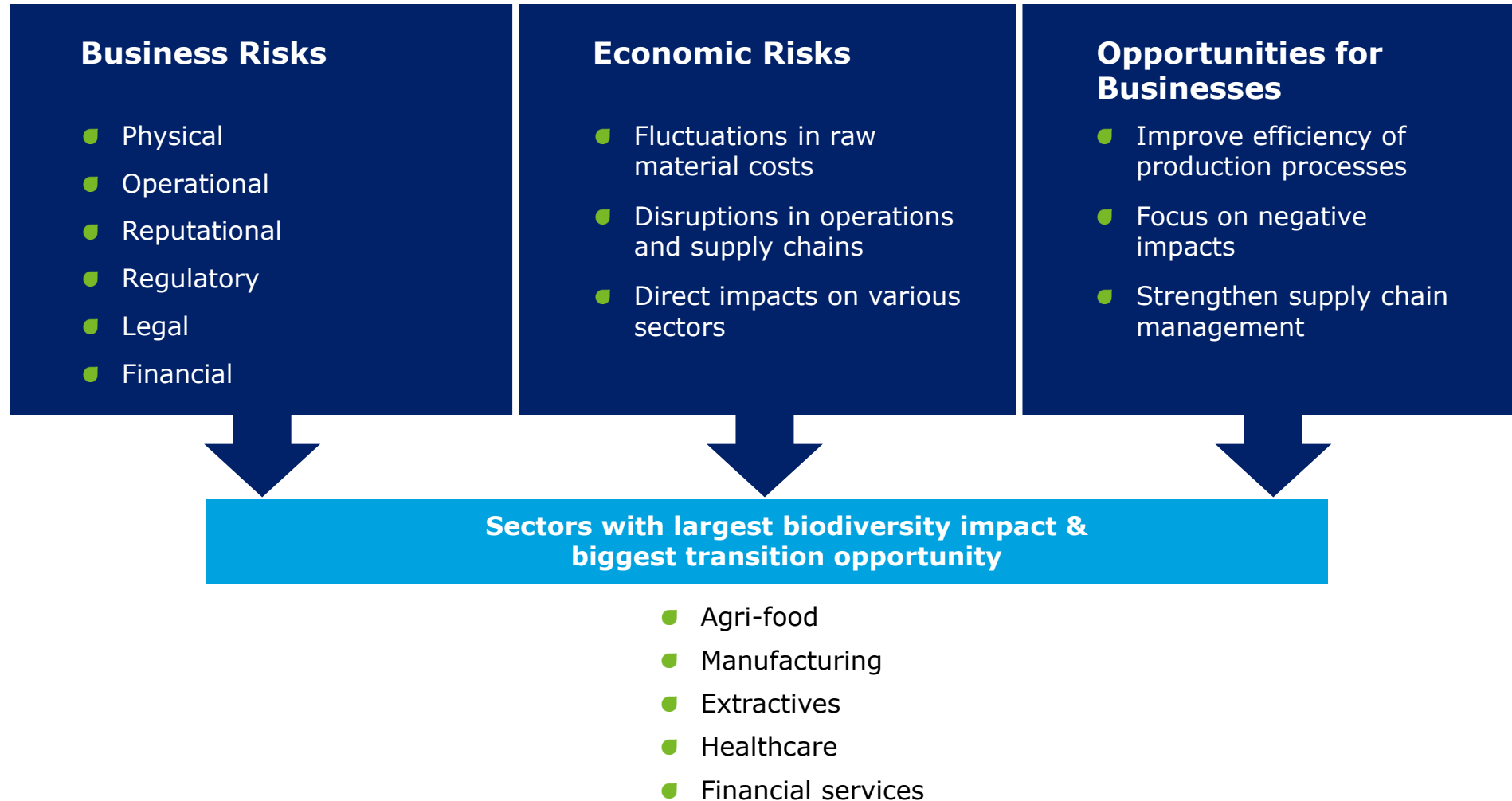
Biodiversity loss focus for the next decade

Where are we now?

- S&P Global Trucost analysis:
 - 3,500 companies representing 85% of the global market cap
 - 65% of company business models align with at least one of the UN SDGs
 - **<1% align with SDGs 14 and 15**
- Most sectors rely on biodiversity, yet corporates fail to take it into account in the context of supply chain, risk management, product and strategy
- 3 systems – food, land and ocean use; infrastructure and the built environment; energy and extractives – are responsible for endangering 80% of threatened or near threatened species
- The alarming decline in biodiversity must be reversed urgently – over 50% of global GDP is highly or moderately dependent on nature
- Failure to act could pose a systemic risk to the global economy and result in the collapse of food systems and huge financial repercussions



What does biodiversity loss mean for the economy and companies?



Orange crop – liquid gold?



- 2023 – Florida orange crop smallest in 90 years driven by disease, freezing weather and two hurricanes
- Production at 18m or 50% reduction vs 2022 and 93% decline from the peak output in 1998
- Smaller crop than California for the first time since WWII
- Fruit smaller than average so need more oranges per box to squeeze for the same amount of juice
- Retail juice price not from concentrate at \$10/gallon or double the cost 20 years ago
- Long term trend is for production to continue declining because of disease (caused by urbanisation)
- 2024 – orange juice prices soar to record highs due to bad weather and disease in Brazil

Regulation shaping investment landscape

Policy and regulation driving momentum

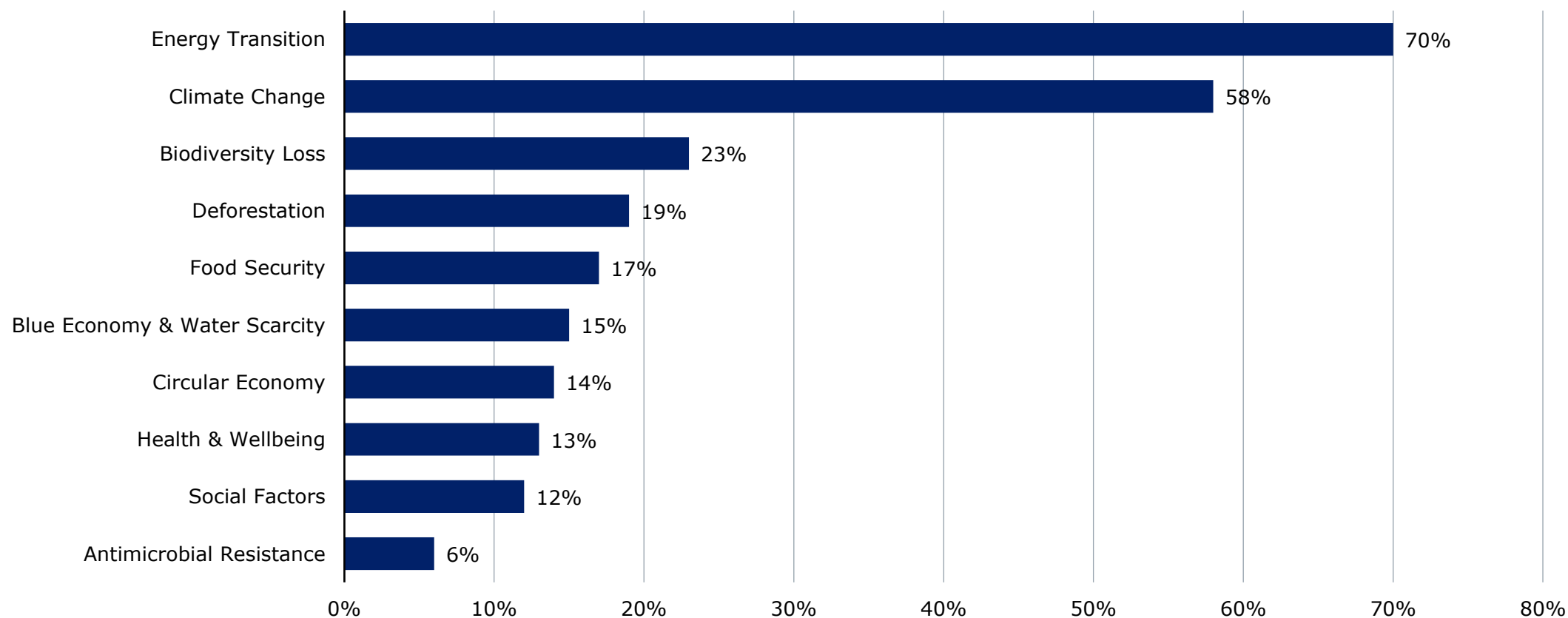


GBF – The Paris moment for nature

- 30x30 – Effective conservation and management of at least 30% of the world's lands, inland waters, coastal areas and oceans, with emphasis on areas of particular importance for biodiversity and ecosystem functioning and services
- Restoration completed on at least 30% of degraded terrestrial, inland waters, and coastal and marine ecosystems
- Reduce to near zero the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity
- Cut global food waste in half and significantly reduce overconsumption and waste generation
- Reduce by half both excess nutrients and the overall risk posed by pesticides and highly hazardous chemicals
- Progressively phase out or reform by 2030 subsidies that harm biodiversity by at least \$500bn p.a., while scaling up positive incentives for biodiversity's conservation and sustainable use
- Mobilize by 2030 at least \$200bn p.a. in domestic and international biodiversity-related funding from public and private sources
- Raise international finance flows from developed to developing countries, to at least US\$20bn p.a. by 2025 & US\$30bn by 2030 p.a.
- Prevent the introduction of priority invasive alien species, and reduce by at least half the introduction and establishment of other known or potential invasive alien species, and eradicate or control invasive alien species on islands and other priority sites
- Require large and transnational companies and financial institutions to monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity through their operations, supply and value chains and portfolios

Capital flows will increase significantly

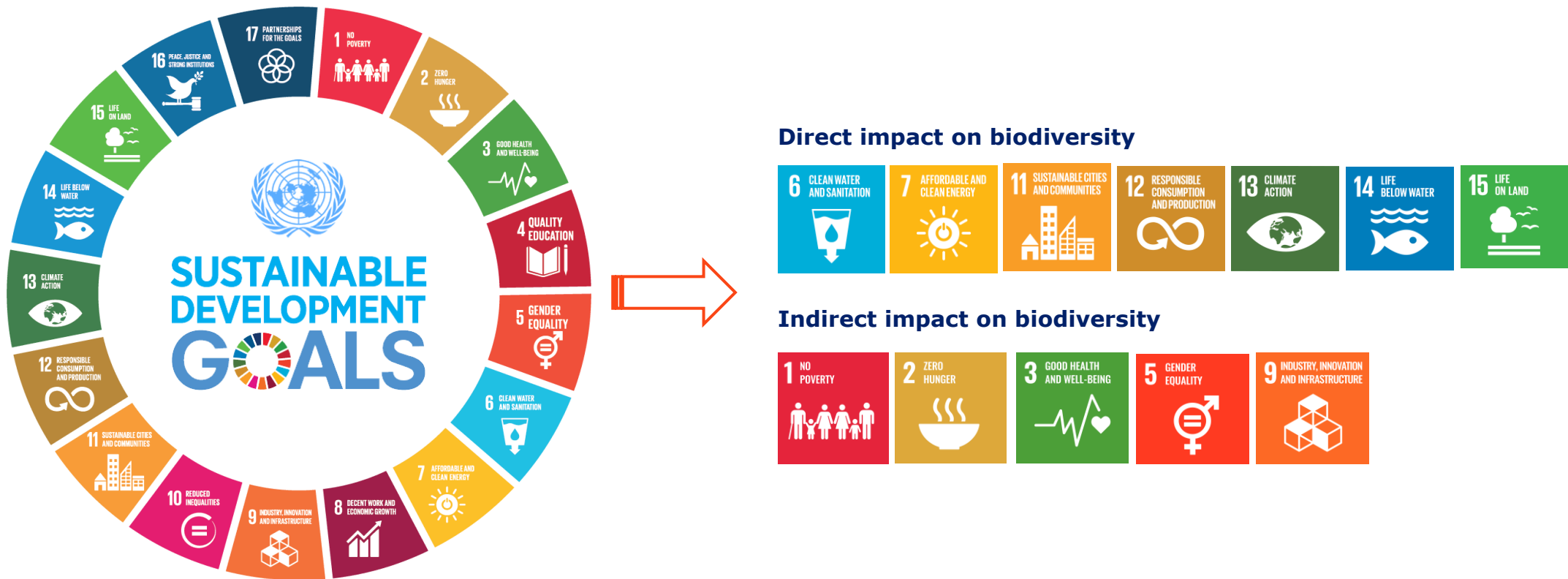
Expectations on capital flows



Source: Citi Research.

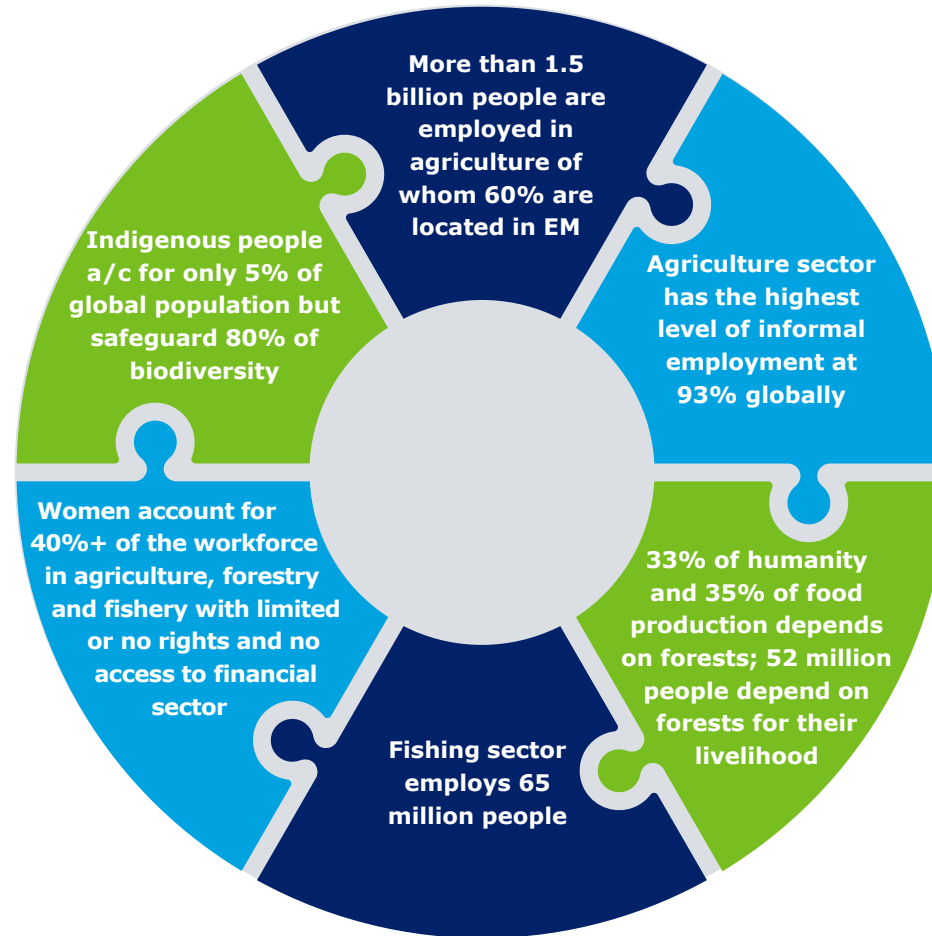
Biodiversity alignment with SDGs

More than 80% of SDGs are reliant on biodiversity

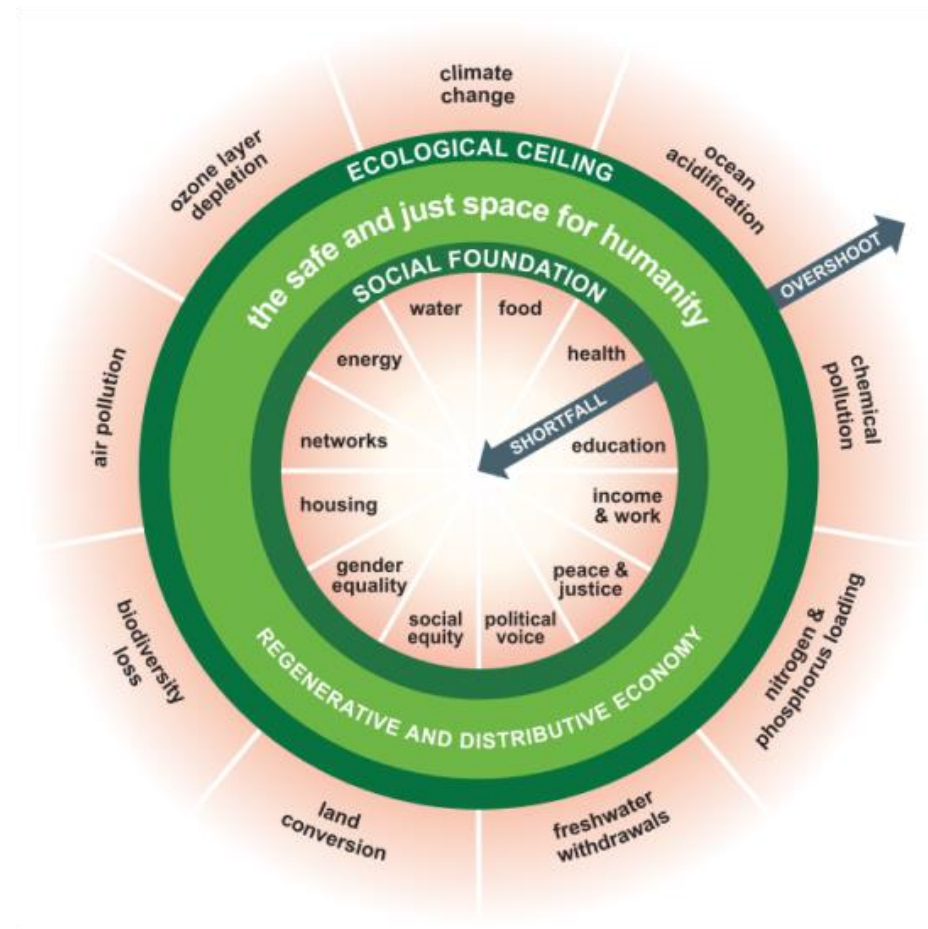
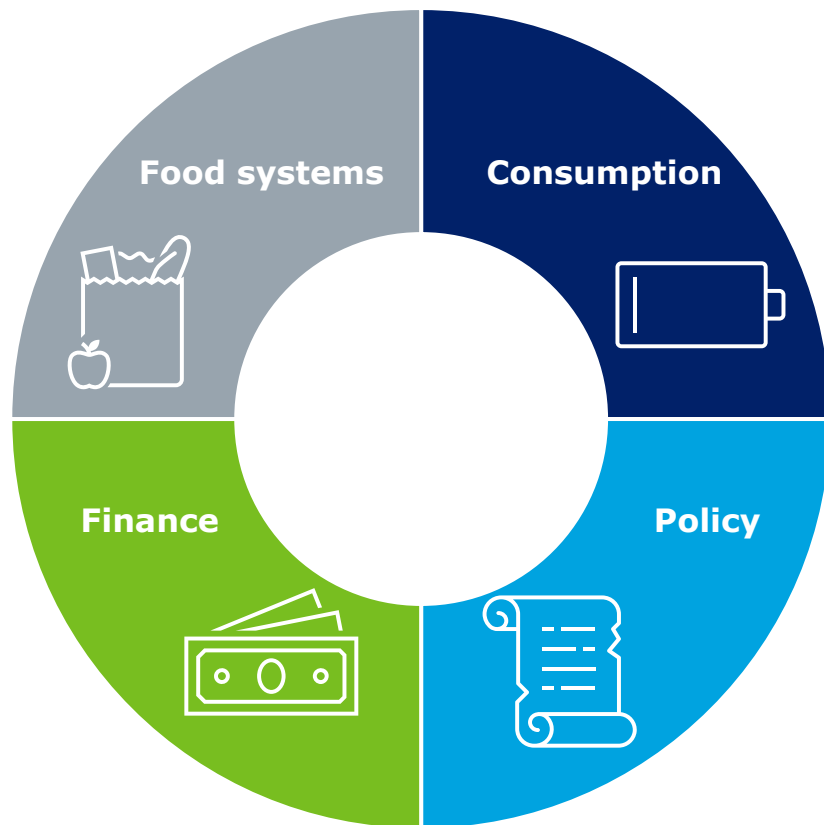


Sources: For illustrative purposes only. The 17 United Nations Sustainable Development Goals (SDGs).

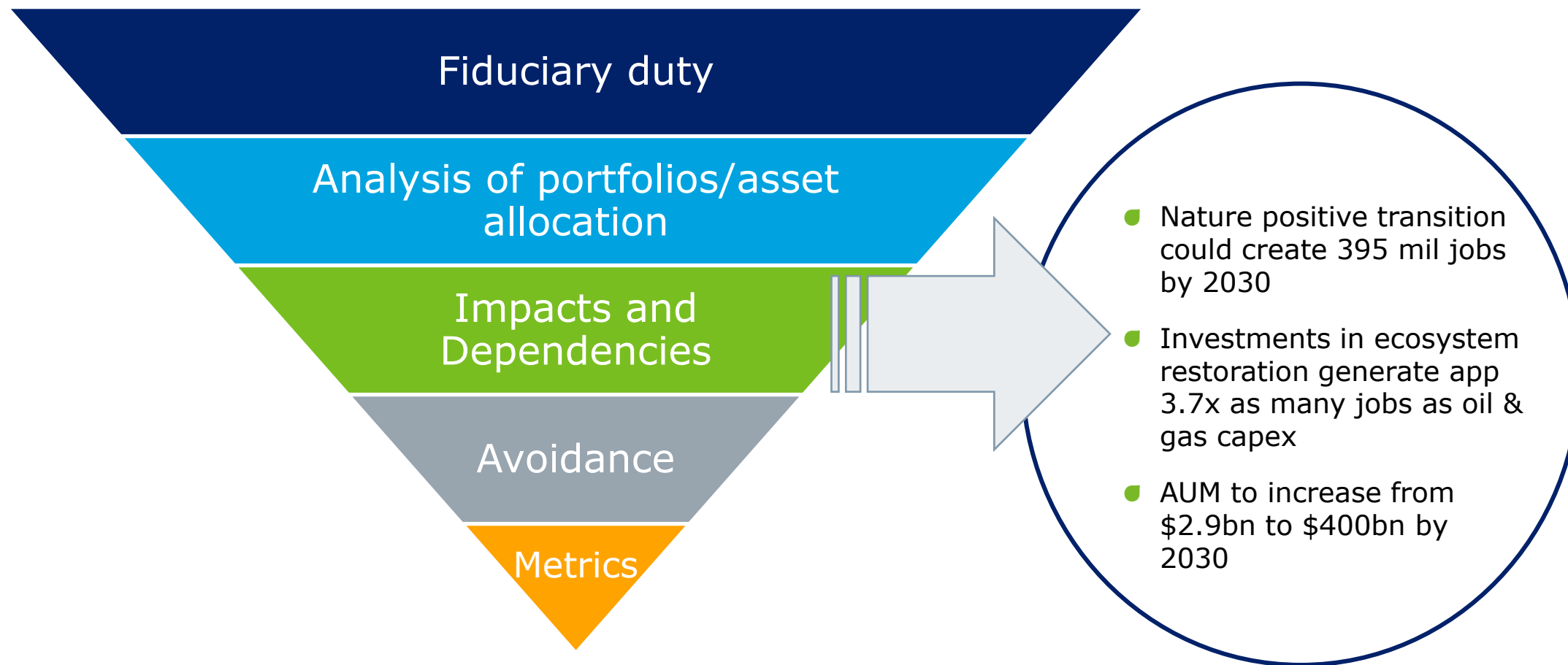
Biodiversity – proxy for S



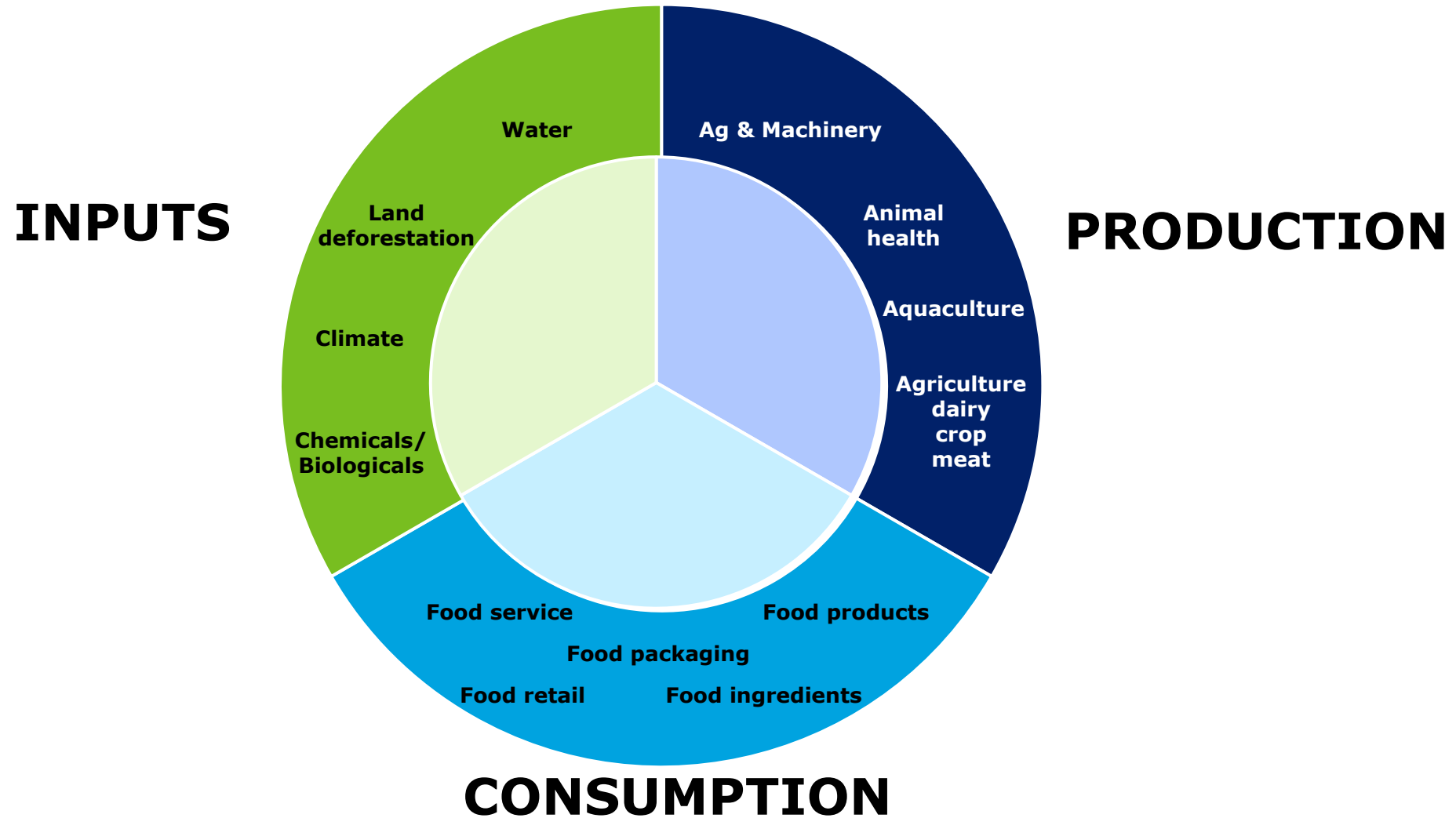
The way forward



The role of finance



Investments should drive system resiliency



Emperor Penguins



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