

Concept note

Introduction

In 2021 Professor Sir Partha Dasgupta FRS published his review into the economics of biodiversity. This set out the many ways in which our economies, livelihoods, and well-being are fundamentally dependent on the natural world. It also demonstrated how our collective demands on nature exceed the natural world's capacity to regenerate – pushing climate and ecosystems towards tipping points beyond which they will not provide the goods and services we rely on.

The Dasgupta Review prompted considerable business interest in what the analysis meant for them and their business models. This conference aims to help businesses understand the commercial risks they face due to ecological risks. The programme has been put together to provide business leaders with answers to three questions: Why should I care?

- What should I care about?
- What can I do about it?

As well as promoting business awareness of ecological risk, the conference provides an opportunity for scientists to understand the issues businesses are facing in measuring and managing their nature-related risks. In doing so, The Royal Society hopes to promote greater collaboration between these sectors to deliver solutions to shared challenges.

Session 1: Ecosystem services and physical risk

Without nature there is no business. The direct benefits and provisioning services of nature, such as food production, materials for construction, and clean water are well known, especially to businesses that depend on them. The indirect benefits such as climate regulation, pest and disease control, and inspiration for innovation, are often taken for granted and their value not recognised until they are disrupted or lost entirely. Continued pressures on nature from human activities driving land-use change, pollution, and climate change are damaging ecosystems. There is also an increased risk of ecosystems reaching tipping points – abrupt, irreversible shifts in ecosystem states. These tipping points can lead to the collapse of the critical ecosystem services on which businesses rely, causing severe disruptions to operations and supply chains.

Even before we reach these tipping points, the extent of environmental degradation means physical risks are increasingly correlated around the world, limiting the scope for geographical diversification to mitigate these risks. As the climate and nature crises are interlinked, these physical risks include all the risks associated with climate change such as drought, flooding, and extreme temperatures, as well as biological risks such as pests and diseases, loss of pollinators, and overexploitation of wild plants and animals leading to population collapses.

The risks to their supply chains mean there is a self-interested reason for businesses to reduce their negative environmental impacts, both to increase their resilience to future shocks and to make the most of opportunities from new products and markets. Policymakers can help by ensuring transparency, promoting best-practice, and addressing collective action problems.

Key messages: Business depends on healthy ecosystems. The net effect of current business practices is undermining the capacity of these ecosystems to provide the goods and services that business depends on. Interactions between the climate system and biodiversity mean that passing a tipping point can trigger cascading effects, increasing the likelihood of tipping points being reached in other interconnected systems. As it is very hard to determine how close we are to a tipping point, we must avoid further damage to ecosystems that are showing signs of approaching such tipping points. New approaches to economics and business models are needed to avoid these impacts and policy has an important role in promoting this transition.

Session 2: Financial Risk

Nature-related dependencies and impacts translate into financial risks for the businesses that invest in them, lend to them, and insure them. These risks fall into three categories: physical risk, transition risk and systemic risk. This session will offer perspectives on how these risks play out at a range of scales.

At a macro level, development and central banks face challenges such as asset devaluation and non-performing loans, while economic disruption causes market volatility. At the corporate level, companies contributing to environmental degradation may see negative impacts on market valuations and capital costs. The insurance and reinsurance sectors are particularly vulnerable, facing uninsurable assets, greater uncertain risk assessments and increased underwriting costs.

Key messages: Nature-related risks lead to economic risks for companies through reduced income and higher costs such as borrowing, insurance and regulatory compliance. Increased economic risks threaten market stability through changes to valuations and liquidity.

Session 3: Legal risk to companies and directors

Companies and their Directors face a wide range of current and future legal risks arising from their dependencies and impacts on nature. Some countries are introducing the crime of ecocide to their criminal codes. Civil society organisations have proved themselves effective at using the courts to hold both governments and businesses accountable for failing to comply with both national laws and international commitments.

In some jurisdictions, Directors could face personal liability and fines for failing to identify and manage nature-related risks to their business. Companies can be held liable for both their direct impacts on nature and indirect impacts through their supply chains. Policy changes, such as import bans in the EU on products linked to deforestation, could abruptly cut off market access for some companies. Changes to disclosure requirements are likely to mandate that companies report on nature-related risks.

Key messages: Companies and their directors face significant legal risks related to their dependencies and impacts on nature, including potential personal liability for failing to manage these risks in their operations and supply chains.

Session 4: How do ecological risks compare with other supply chain risks?

Many companies have net-zero strategies and supply chain risk management increasingly includes climate-related risks. Although Boards are less familiar with nature-related risks, climate and nature risks are interconnected and share similarities in their widespread and long-term impacts, providing an opportunity to assess and address the two together. However, there are important differences in the extent to which they are correlated and the scales at which they occur. To manage these risks effectively, companies should conduct comprehensive assessments, use scenario analysis, develop integrated strategies, and implement robust governance structures.

Key message: Companies should integrate ecological and climate risk management into their supply chain risk framework and adopt holistic strategies to boost resilience and sustainability.

Session 5: What can my business do?

Businesses can mitigate ecological risks independently or in collaboration with their supply chain partners. However, some interventions require ecosystem-level cooperation. This could require collaboration between competitors or across sectors that share a dependency on the same ecosystem. Speakers in this session will share their experience of working individually or through sector-wide frameworks to protect nature whilst avoiding anti-competitive practices.

Key messages: Having assessed their nature-related risks, businesses need to determine what interventions they can take alone and where collaboration is necessary. There are precedents for cooperation between competitors whilst complying with competition law.

Session 6: Case studies: Investment and supply chain perspectives on the causes of and responses to nature loss

This session will feature perspectives from people involved in the production, retail and investment stages of supply chains. They will discuss topics such as the social and economic pressures on small-scale producers that lead to over-exploitation of nature, the barriers to generating and sharing data between supply chain partners, and opportunities for engagement to address these challenges.

Session 7.1: Metrics: What is and is not possible.

Nature's complexity makes it impossible to measure it in its entirety. There are hundreds of metrics about nature that provide some insight into this complexity, but it is not always clear how they differ or should support decision making.

This talk will explain the various elements of nature that metrics are trying to assess (such as the *state* of nature, the *pressures* that are driving changes in ecosystems, the *response* taken by society to address negative impacts, or the *ecosystem services* nature provides), how effective they are at doing so, and what metrics might be most relevant to business and political decision makers. It will also look at how new technologies like satellite imagery, ecological acoustics and eDNA are increasing our ability to monitor nature and add value to the metrics we use to understand it.

Key messages: Scientists can help businesses understand what metrics are best suited to measuring and managing their nature-related risks, the reliability of the data that underpins these metrics and where new technologies can help.

Session 7.2: Data availability and use

Businesses and policymakers face challenges in accessing and assessing location-specific nature-related data relevant to their infrastructure and activities. Data is available from various digital repositories and databases but it is not always clear how reliable and comparable this data is. This talk will help decision makers using biodiversity data by discussing data standards, quality, and the value of expert partnerships in helping to source decision-grade data, and explore efforts underway to close the nature-data gap.

Key messages: Decision-grade data needs to be up-to-date and location-specific. Not all publicly available data meets these standards, so businesses must carefully select the data on which their nature-related risk assessment and management strategies are based.

Session 8.1: Frameworks for action: Global policy goals

The four goals and 23 targets of the Kunming-Montreal Framework outline global efforts to reverse biodiversity loss while ensuring a good standard of living for all. Some of these targets, such as encouraging nature-related financial disclosures, are specifically aimed at businesses, whilst many others either depend on business action or have serious implications for current business models.

This talk will explain the processes and funding mechanisms through which the Global Biodiversity Framework aims to restore nature and discuss the roles businesses are expected to play. It will also look ahead to the next Conference of Parties to the UN Convention on Biological Diversity (CBD COP 16) and discuss the opportunities for businesses to engage with international decision making.

Key messages: International policy frameworks are emerging that will increase the emphasis on greater private sector investment in conserving and restoring nature.

Session 8.2: Frameworks for action: Architecture for action

The agreement of the Kunming-Montreal Framework has driven increased interest in global scale solutions to nature-related data. This talk will highlight some of the initiatives to develop a global nature-related public data facility to meet the demand for standardised, up to date, high-quality data.

Key messages: A global biodiversity data facility would help coordinate action across a range of scales and involving a range of actors. to help deliver global policy goals.

Session 8.3: Frameworks for action: Reporting standards, tools and initiatives

The overall goal of the Global Biodiversity Framework between now and 2030 is to halt and reverse biodiversity loss. To help coordinate action towards this goal, a consortium of 27 organisations convened the Nature Positive Initiative.

This talk will focus on the work the Nature Positive Initiative has done to identify a 'minimum, meaningful, practical, and available' set of proxy metrics for the state of nature.

Key messages: Consensus on a minimum viable set of metrics to assess the state of nature is important for the development, delivery and monitoring of nature conservation and restoration strategies.

Session 9: What further science is needed to meet the objectives of Target 15 of the Global Biodiversity Framework?

This panel discussion will hear from speakers from corporate supply chain businesses and financial institutions to discuss how science can help meet Target 15 of the Global Biodiversity Framework – that businesses assess, disclose and reduce their biodiversity-related risks and negative impacts.

Panellists will discuss why it is important to link state of nature metrics to ecosystem service provision, what kinds of questions can be answered using generic metrics and what has to be case, sector or biome specific. The session will also assess our ability to evaluate the risks from nature loss and returns on investing to conserve and restore nature.

Session 10: Bridging the gap

Having heard from scientists about the state of the art in measuring nature and from businesses about what information they need to inform their decision making, this session will consider the priorities and mechanisms for greater collaboration and alignment between the scientific and business communities. It will also discuss what businesses need from policymakers to encourage ambition and prevent collective efforts being undermined by those unwilling to engage.