Investing in Nature
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Introduction

We do not know precisely how countries will tackle the triple crises of a global recession, rapidly degrading environment, and widening inequalities exacerbated by the COVID-19 pandemic. Each one is a systemic issue in its own right, but together they form the perfect storm of cascading threats. What we do know is that policymakers everywhere will have to make choices. They can continue with the centuries-old approach of making small-incremental changes and superficial reforms that fail to address or engage with the underlying problems. Or they can seize the opportunity to adopt a radically different approach, collectively reimagining the foundations of our economies by recognising that prosperity is no longer just about economic growth but also about ensuring people are living prosperous, fulfilling lives and that we are investing in sustaining the health of our planet.

In this lecture, I will be looking at how we can create more successful ways to live, with opportunities for all to flourish through increased wellbeing, and where investment in nature is the norm, used to underpin sustainable and inclusive economic growth. The outcomes I am interested in include: Biodiversity Net Gain, Natural Prosperity and Resilient Places, a Just Transition to Net Zero and an Inclusive Green-Blue Economy. To deliver these, it is vital to look at the types of fiscal policies and financial instruments and the new kinds of decision-making processes that will be needed.

The Future We Want

When the world agreed to the 2030 Sustainable Development Agenda in 2015, called *The Future we Want*, it was clear that climate change, biodiversity loss and social inequality needed to be addressed urgently. Since then, the Covid-19 pandemic has exposed how much these aspects are intertwined. Investors have been focussing on the climate crisis, one of the planet's gravest problems, but now they are becoming increasingly concerned about the significant financial risks stemming from biodiversity loss and the destruction of natural ecosystems.

Damage to ecosystems including forests, grasslands and coral reefs — and the associated loss of biodiversity — could drain nearly USD 10 trillion from the global economy by 2050, according to the Global Futures report from the World Wide Fund for Nature (WWF)[1]. The losses stem from smaller crop yields and fish catches, and greater exposure to floods and other natural disasters, among other factors.

The direct and indirect, non-market intangible costs associated with the loss of benefits to society from natural resources and ecosystem services caused by marine plastics alone are estimated to be between USD 3,300 and USD 33,000 per ton. Given that there were between 75 and 150 million metric tons of marine plastic waste in 2011, this amounts to an annual loss of USD 500-2,500 billion. The loss of coastal flood protection services, for example through the loss of coral reefs caused by

[1] Roxburgh, T., Ellis, K., Johnson, J.A., Baldos, U.L., Hertel, T., Nootenboom, C., and Polasky, S. 2020. Global Futures: Assessing the global economic impacts of environmental change to support policy-making. Summary report, January 2020. https://www.wwf.org.uk/globalfutures

the ciliate pathogen *Halofolliculina,* an invasive alien species known to cause skeletal eroding band disease in coral reefs and dispersed via marine litter, is estimated to be USD 272 billion globally.

In WWF's report they present a 'Global Conservation' scenario – where the world adopts a more sustainable development pathway and safeguards areas that are important for biodiversity and ecosystem services — the annual global GDP would be 0.02% higher (US$ 11 billion) by 2050, compared to a baseline scenario of no change in ecosystem services, and an annual net gain of US$ 490 billion per year compared to the BAU scenario. These figures are a conservative estimate as they only consider six of the many ecosystem services provided by nature (those for which there is enough evidence to quantify). They do not account for the potential effects of 'tipping points' – thresholds beyond which habitats change rapidly and irreversibly, such as rainforests shifting to drier and more fires and drought-prone savannahs, making them vulnerable to catastrophic failure of ecosystem services. Moreover, the model does not capture the economic impacts of all environmental changes that the planet is undergoing (e.g. climate change and water scarcity), only those associated with changes in specific natural assets, so they are only indicative of one aspect of the economic case.

As the landmark global assessment from the Intergovernmental Science-policy Platform on Biodiversity and Ecosystem Services (IPBES) warns, current levels of ambition fall short. There needs to be a New Deal for Nature and People to reverse the loss of biodiversity and put nature on a path to recovery for the benefit of people and planet before it is too late.

Impact Inequality

In a healthy biosphere, humanity can draw down the goods and services that Nature supplies not only for consumption but also for accumulating produced capital (roads, buildings, machines, ports) and human capital (health, education, aptitude). This is what we have been doing over millennia and is what economic development has come to mean for so many. It has been a legitimate formulation of economic development whilst demand – sometimes called our *ecological footprint* - was less than the biosphere's ability to supply goods and services to meet that demand sustainably. Today we are in a different situation. Now demand (measured as the product of human population and human economic activity per capita divided by the efficiency with which Nature is converted into Gross Domestic Product and transformed by waste products), is larger than supply (measured as the product of the rate at which Nature regenerates itself and the stock of natural assets). The 2021 *Dasgupta Report on The Economics of Biodiversity*[2] defines this as *impact inequality.*

The reality of today's situation is that even if the global population size remained constant and deterioration of Nature was constrained to be 0.1% per year i.e. virtually no waste and degradation, there would still need to be an 60 per cent increase in the efficiency with which Nature is converted into GDP. In other words, increases in efficiency alone will not be able to close the gap between human impact and Nature's regenerative capacity. And neither is perpetual economic growth possible in the long run.

Today, we are collectively failing to sustain Nature, and demands far exceed its capacity to supply us with the services and goods we all rely on. Over the past century, produced capital per person doubled, human capital increased by about 10%, but the stock of natural capital per person declined by nearly 40%. This is endangering the prosperity of current and future generations. Current biodiversity declines are faster than at any time in human history. The devastating impacts of Covid-19 and other emerging infectious diseases, driven by land-use change and exploitation of certain species, could prove to be just the beginning of a downward spiral of risks of tipping points and thresholds being crossed.

[2]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf

How can humanity transform today's Impact Inequality into an Impact Equality? Dasgupta proposes four avenues: (i) reduce per capita global consumption; (ii) lower future global population from today's level; (iii) increase the efficiency with which the biosphere's supply of goods and services are converted into global output and returned to the biosphere as waste; and (iv) invest in Nature through conservation and restoration to increase our stock of Nature and its regenerative rate. I believe that the last of these - investment in Nature – is urgent and will potentially have the greatest impact in offsetting the damage we are doing to Nature by using global wealth to create alternative pathways for managing land and oceans. The use of wealth when it comes from people's pension funds will also help drive a deeper understanding across the whole of society that investing in Nature is akin to investing in ourselves and our wellbeing and that damaging Nature is a direct cost of ourselves.

Valuing Nature

The main obstacle to encouraging investment in Nature is the deep-rooted, widespread institutional failure to recognise the true value of all the goods and services provided by Nature; these are not reflected at all in market prices, or they are highly distorted. This is generally because Nature is mobile, invisible, and silent. This means that negative impacts have gone unnoticed giving rise to widespread 'externalities', making it difficult for markets to function well. It has also led to massive underinvestment in maintaining Nature.

Nature is our most precious asset and is more than an economic good. Its very existence and intrinsic worth is recognised by many, especially indigenous peoples. Environmental economists, such as Partha Dasgupta, Herman Daly and Robert Costanza, and initiatives such as TEEB – The Economics of Ecosystems and Biodiversity and the Capital Coalition, have set out different methods and frameworks to value ecosystems and biodiversity.

Payments for Ecosystems Services and Biodiversity

During 2021, political leaders and negotiators will meet to discuss global policy outcomes regarding nature, climate and development. Important aspects will be the valuation of nature, payment for ecosystem services and the alignment of financial institutions with investments in nature. Historically a mixture of international development funding and payments for ecosystem services has been used to help poorer nations protect globally important ecosystems or biomes within their boundaries, such as the Ghats of India and the Amazon. There is a track record of rich countries paying developing countries to secure carbon sinks, finance sustainable development, and deal with the effects of climate change, based on rich countries' disproportionate contribution to the climate crisis.

However, *ad extremum*, this can lead to an abnegation of responsibilities. A case in point is the Amazon rainforest within the borders of Brazil. After more than two years denying that runaway deforestation in the Amazon was a real problem, President Jair Bolsonaro's environment minister asserted that his country would cut deforestation by up to 40 percent in one year in exchange for USD 1 billion from the international community. But Brazilian legislators, governors, and civil society groups point out that there are several reasons to be wary of negotiating with President Bolsonaro. For one thing, Bolsonaro's administration is hostile to conservation efforts. When former President Dilma Rousseff joined the Paris climate agreement in 2015, Brazil committed itself to ending illegal deforestation by 2030. But Bolsonaro, there has been a tacit promise to relax enforcement of strict environmental legislation, and deforestation has reached its highest point since 2008. The administration is now presenting the aims of half a decade ago as the best-case scenario. It is not clear what more money would accomplish in this case.

As Norway's minister of climate and environment recently noted, "Decreasing deforestation in the short term is a matter of political will, not a lack of advance financing." From 2008 to 2018, Norway poured USD 1.2 billion into the Amazon Fund, which pays Brazil to protect the rain forest. It knows better than most that Brazil has the technical ability to rein in deforestation if it wants to. Brazil's National Institute for Space Research, or INPE, for example, has world-class tools to monitor the expanse of the Amazon rain forest, which is crucial for policy planning and implementation. Using its own national know-how, centre-left Workers' Party governments cut deforestation by 80 percent between 2006 and 2012. At that time, the government "carved out about 150 million acres for conservation—an area roughly the size of France—and used police raids and other tactics to crack down on illegal deforesters."

Most models of economic growth and development consider that Nature is capable of producing a finite flow of goods and services, but that with technological progress, exhaustibility can be overcome. However, as we now know economies are undermining the natural systems that they depend upon. Designing solutions needs to address these fundamental tenets. The Dasgupta Review concludes that we will need to create transformative pathways that:

i) ensure demands on Nature do not exceed supply and investments in Nature increase its supply above current levels;

ii) use measures of economic success by entering Nature into social and financial decision-making processes

iii) transform institutions and systems, in particular finance and education, to enable these changes to take place and to sustain them in the future.

Institutional Fitness

A major issue is how unfit many of our institutions are in managing externalities. For example, governments subsidise industries and individuals to exploit Nature rather than protect it. A conservative estimate of the total cost globally of subsidies that damage Nature is approximately USD 4 – 6 trillion annually. For ecosystems outside national boundaries, such as the oceans beyond exclusive economic zones, imposing charges, or rents, for their use e.g. ocean traffic and fisheries and prohibiting their use in ecologically sensitive areas are vital. Revenues generated from this approach could pay for the system of international governance.

The type of institutional arrangements that enable such sustainable engagement with ecosystems are best thought of as 'polycentric'. They pool knowledge and perspectives among and across different levels – global, regional, national and local – and from different organisations, communities and individuals. In doing so, they enable relevant information to flow, and allow for collaborative planning, participation and coordination.

However, relying on institutions alone to curb our excesses will not be enough. The discipline to draw on Nature sustainably must, ultimately, be provided by everyone as individuals. But societal change – particularly growing urbanisation – has meant that many people have grown distant from Nature. Establishing the natural world in education policy is thus essential. The development and design of environmental education programmes can have tangible impacts, for example by focusing on local issues, and collaborating with scientists and community organisations. Interventions to enable people to understand and connect with Nature will also improve health and well-being, help empower citizens to make informed choices and demand the change that is needed. For example, by insisting that financiers invest pension funds and other savings sustainably and that firms disclose environmental conditions along their supply chains, and even boycotting products that do not meet certain standards.

Green Futures Strategies and Planning

At the national level, governments have been introducing policies and legislature to encourage and restrict certain activities. For example, there are multilateral agreements to control or eliminate a

range of hazardous chemicals, such as mercury and pesticides, in products. The UK has banned microbeads and introduced charging for plastic bags; other countries have gone further by banning a wide variety of single-use plastic goods. But while such actions can lead to new behaviours, they are not the solution to the wholesale transformation of institutions and financial and education systems. What is needed is a whole of society approach to ensure that Nature is at the core of decision-making.

Land Management and Nature – UK response

With the UK exit from the European Union and an end to payments under the Common Agriculture Policy and the Common Fisheries Policy, the role of farmers and fishing enterprises in supporting the transition towards placing Nature at the core of the economy needs to be enshrined in law and supported through changes to the financial system. The UK Government's *A Green Future: Our 25 Year Plan to Improve the Environment,* along together with the *Clean Growth Strategy* and the *Industrial Strategy,* is an attempt to do this. The *Environment Plan* sets out a comprehensive and long-term approach to protecting and enhancing the environment for the next generation and delivering clean, green growth to combat global warming. The main goals are to use the land and seas more sustainably, create new habitats for wildlife to halt the decline in native species and improve biodiversity, minimise pollution, especially chemicals and plastic waste to make our rivers, lakes and oceans cleaner and healthier and connect more people with the environment to promote greater well-being. The aim is to incentivise farmers, landowners, fisheries and public authorities to deliver a range of outcomes connected to the goals, by changing the ways that they undertake their economic activities by adhering to a set of environmental principles and metrics. The principles include the 'polluter pays', 'precautionary principle', and 'environmental net gain', but there are as yet no principles governing valuation and payment and the balance between public goods and private benefit.

The Environment Plan includes *Environment Land Management* schemes; these come into effect in 2024 and are intended to support the rural economy and the UK's commitment to net zero emissions by 2050. Farmers and other land managers will be able to enter into agreements to be paid for delivering clean and plentiful water, clean air, thriving plants and wildlife, protection from environmental hazards, reduction of and adaptation to climate change and beauty, heritage and engagement with the environment. There are 3 new schemes that will reward environmental land management: *Sustainable Farming Incentive, Local Nature Recovery* and *Landscape Recovery*. The Local Nature Recovery scheme will pay for actions that support local nature recovery and meet local environmental priorities and encourage collaboration between farmers, helping them work together to improve their local environment. It will begin piloting in 2022 and launch in 2024. The Landscape Recovery scheme will support landscape and ecosystem recovery through long-term projects, such as restoring wilder landscapes in places where it is appropriate, large-scale tree planting and peatland and salt marsh restoration. The scheme will begin piloting around 10 projects in 2022 and launch in 2024.

The *Sustainable Farming Incentive* scheme will pay farmers to manage their land in an environmentally sustainable way. The scheme is made up from a set of standards. Each standard is based on a feature such as hedgerows or grassland and contains a group of actions that the farmer or landowner needs to do; they can choose which standards they want to follow, and where on their land to apply them. The idea is that they will be paid for doing the actions within the standards they have selected. The Sustainable Farming Incentive began piloting in 2021 before its launches in 2022.

Currently there are 2000 farmers engaged across 46 live tests and trials to develop the land management plans; 85 per cent agreed that having such as plan makes sense, but there has been no consensus on certification or how to balance the practicality of delivering public goods with food

production and business profitability. There is also a problem with monitoring; feedback from 25 farmers, alongside those participating in the Cranborne Chase Area of Outstanding Natural Beauty (AONB) test, suggest that the time taken to complete monitoring is a barrier to conducting self-assessment and that the timing and frequency of monitoring could disadvantage some agreement holders. They have proposed instead that monitoring should be carried out over time to give a fair representation of the farm. In addition, Ordnance Survey, which is supporting 4 tests and trials, found that they could not analyse much of the data collected by farmers as it did not contain all the information required, and was not always accurate; trained advisers would thus be needed as a part of a verification and data cleansing process.

Regarding payment rates, the emerging consensus is that when these are calculated by the *income forgone plus costs approach,* they do not provide a strong enough incentive for farmers to join a scheme. Many participant farmers have continually stated that they have not been compensated sufficiently under previous schemes for the activities they have undertaken, particularly where capital costs are incurred. New tests and trials with farmers are looking to determining preferred payment rates. Farmer participants in the Lanhydrock Estate test reviewed a range of management actions and highlighted where they felt they had not been adequately rewarded under Countryside Stewardship. For example, farmers proposed payment ranges of 500-650 GBP per hectare to sow multi-species diverse grass leys, including grasses and forbs such as legumes and deep-rooted species, compared to the payment of 309 GBP per hectare that they had received under the Countryside Stewardship scheme; and 100-250 GBP per tree compared to 8.80 GBP per tree. Others suggestion for determining payments are to use a points-based approach, which is simpler, easy-to-use and more familiar or a results-based payment approach. This latter approach is seen by some groups of farmers familiar with it as the fairest basis and most likely to encourage farmers and landowners to apply. The frequency of payments also needs to be regular and reliable throughout the lifetime of an agreement with a stable, fixed-date payment schedule to enable scheme users to effectively plan their business.

External factors such as extreme weather, climate change, market volatility present a risk to farmers and landowners under results-based schemes and are likely to reduce uptake and delivery of environmental outcomes. To overcome this, a hybrid model of component-based payment tiers with a minimum basic payment linked to delivery of basic results and additional higher payments linked to increased performance above the base level could also work. The Environmental Land Management could also pay for identifying: opportunities for environmental enhancements and protections that have been missed in the past, such as management of small woodlands, which have been historically undervalued as an on-farm resource, and access opportunities to be funded, such as capital cost and maintenance funding for infrastructural improvements increasing access (e.g. car parking), compensation payments for land lost to increased public access and path provision and funding for additional legal liabilities incurred by having permissive access on land.

Whilst the Environment Land Management schemes will undoubtedly be instrumental in helping agriculture create nature-based approaches to land management, they will not deliver at scale to generate the investment needed to transform the whole of society. For this we must look to changes in our financial systems and cultural norms.

<u>Financial Systems</u>

Changes to our global financial system will be critical in supporting a more sustainable engagement with Nature. The financial crisis of 2007–2008 saw worldwide financial assets fall by USD 16 trillion to USD 178 trillion in 2008 from their peak of USD 194 trillion in 20074. Misaligned incentives, conflicts of interest, a predominance of short-termism, failures of both accountability and responsibility and, in some cases, a misplaced sense of fiduciary duty have occurred at many different points along the investment chain and throughout the processes of financial intermediation.

In a sense, financial risk ran ahead of the world's ability to understand and manage it. The growth of securities, the deconstruction and (re)distribution of credit risk through securitisation, and the growth of computer power and modelling in risk management are thought to have resulted in a misplaced belief in enhanced understanding of risk. Yet, ironically, it may have resulted in a reduced understanding of systemic risks in loan and investment products and volatility created by the enhanced ability to trade.

There is a similarity between the underlying factors that contributed to the financial crisis and the environmental risks involved. Changing environmental phenomena such as threats to biodiversity and ecosystem services loss, climate change and water scarcity, and how these translate into tangible financial risk, are also little understood in terms of financial materiality.
Financial stability may already be affected by environmental phenomena that manifest themselves through 'slow failures and creeping risks' in the context of ecosystem loss and degradation. Drivers are emerging that enhance the complexity of these risks:

- Increased regulatory and liability regimes by governments seeking to protect their ecosystems – e.g., the EU Habitats Directive;
- Increased disruptions of supply chains that rely on well-functioning ecosystems such as forestry, fisheries and agriculture;
- Increased attention by media, empowerment of local populations, activism by non-governmental organisations, and heightened sensitivity of international consumers to environmental, social and governance concerns.

Unfortunately, current financial flows devoted to enhancing our natural assets are small and dwarfed by subsidies and other financial flows that harm Nature. Instead, a new financial system is needed that will channel financial investments – public and private – towards economic activities that enhance the stock of natural assets and encourage sustainable consumption and production activities.

Creating the Future of Banking

Financial actors, including governments, central banks, international financial institutions and private financial institutions all have a role to play in managing and mitigating the risks and uncertainty that result from our unsustainable engagement with Nature. The role of the banking industry in tackling this challenge is key. Banks will need to support the transition to a net-zero economy through their lending and financing decisions and through facilitating their clients' transition. However, ten years after the start of the financial crisis the banking industry is still trying to rebuild trust and increase engagement with clients, customers and employees. The banking industry now needs to define and affirm its role and responsibilities in shaping and financing a sustainable future and meeting society's changing needs and demands.

Central banks and financial regulators also have a role in increasing understanding about the systemic extent of Nature-related financial risks. These risks are starting to be hardwired at an organisational level by banks and asset managers and factored into financial products, services and strategies. Project finance is usually the most obvious segment within lending where biodiversity and ecosystem services have become material. Historically, the main driver for the consideration of this issue has been reputational risk associated with project finance, but there can also be direct financial effects if it leads to project delays due to a lack of social license to operate.

The Equator Principles are encouraging emerging sophistication of consideration of environmental and social risk in project finance. Nature also has relevance in export credit and other forms of structured finance. Much less clear is how Nature affects corporate lending – day-to-day lending to large corporate clients. For certain high-biodiversity-impact and -dependency sectors, and in regions

where ecosystem services are already moderately or severely degraded, operational risks to debtors may arise.

Rabobank is a global food and agribusiness bank. It has defined five Food and Agribusiness Principles, one being 'responsible natural resource management'. This Principle is broken down into a number of measures, such as preventing land degradation and soil erosion, minimising pollution of ground and surface water, preventing overfishing, minimising harm to sea life environment, and preserving high-conservation-value areas and biodiversity in general. Derived from these Principles, Rabobank has defined so-called supply-chain policies for a number of sectors in which the bank is very active, specifically in food and agribusiness. In each of those policies, biodiversity and ecosystem services play a central role, as they are treated as a risk or opportunity for credit decisions, acquisitions and engagement with customers. The policies focus on clients in various sectors such as fisheries, soy, sugarcane, cocoa, coffee, biofuels, cotton, forestry, aquaculture, oil and gas and mining. Other crosscutting policies are concerned with animal welfare and genetically modified organisms. Rabobank is currently in the final stages of a specific policy on biodiversity.

The Principles for Responsible Banking is a unique framework for ensuring that signatory banks' strategy and practice align with the vision society has set out for its future in the Sustainable Development Goals and the Paris Climate Agreement. They embed sustainability at the strategic, portfolio and transactional levels, and across all business areas. Two hundred and twenty-nine banks, representing more than a third of the global banking industry, have now joined this movement for change, leading the way towards a future in which the banking community makes the kind of positive contribution to people and the planet that society expects. This is a journey of unprecedented scale and scope at a time when such ambition is urgently needed. Signatory banks commit to taking three key steps which enable them to continuously improve their impact and contribution to society: analyse their current impact on people and planet; based on this analysis, set targets where they have the most significant impact, and implement them; and publicly report on progress. Eighteen months after signing, signatory banks must report on their impact, how they are implementing the Principles, the targets they have set, and the progress they have made. Within four years, signatory banks must have met all these requirements.

<u>No Balance Sheets without Nature – Nomenclatures and Taxonomies</u>

Businesses and financial institutions can also address the materiality of Nature by accounting for dependencies and impacts in their activities, and through the measurement and disclosure, not only of climate-related financial risks but Nature-related financial risks too. What is required is a set of global standards underpinned by credible, decision-grade data, which businesses and financial institutions can use to fully integrate Nature-related considerations into their decision-making, and assess and disclose their use of, and impact on, Nature.

Many countries now produce national accounts using the UN System of Economic Environmental Accounting Central Framework, which measures and monetizes the outcomes of environmental policies. It would be optimal if aggregated disclosures by banks, investors, regulators and companies could be compared with these environmental economic accounts. However, this will only be possible when there is a level of comparability of global sustainable finance disclosures with global disclosures in the UN SEEA by countries and common nomenclatures and taxonomies for coding and classifying economic activities, products, processes etc. of entities across different industrial sectors to generate economic value.

Nomenclatures are designed for different purposes, such as calculating the size of economies, tax accounting, production monitoring, trade flow monitoring and customs tariffs and national statistics. The users of nomenclatures range from government agencies, investors, private corporations and the public sector. In order to determine whether economic activities are accounting for Nature i.e.

their “green-ness” or not, market participants need additional assessment systems to the industry level codes, for example ISIC, NACE in the EU, NAICS in the USA and CSIC in China. Broadly, sustainability taxonomies define if an industrial activity, product, process, etc. is sustainable, green or social, and, in addition, assess the extent of sustainability/greenness/social-ness. Economic Nomenclatures have been further categorized into three broad groups that classify: Economic activities, Products (includes goods and services), and Traded goods.

Many financial market participants use codes from various financial industry data providers. The bit-depth of these nomenclatures are very important: systems that use 4 digits to describe an activity such as motor vehicle manufacturing will be less granular than systems that use 13 digits to describe an activity such as electric car manufacturing. Not all systems that market participants use are equally granular. Some financial institutions may use only 4 digits, e.g. BICS – Bloomberg Industry Classification Systems, GICS – Global Industry Classification Standard (by MSCI), ICB – Industry Classification Benchmark (by FTSE Russell), SICS - Sustainable Industry Classification System (by SASB), TRBC – Thomson Reuters Business Classification. A granular nomenclature with more sub-activities could help market participants to make pre-selection for their sustainability assessments faster and more reliable. Only at the 8-digit level can the electric vehicles be distinguished in the classification system.

To classify products and services, the Central Product Classification and the Classification of Products by Activity systems help to identify which products and services an industry produces. Each product whether it be a good or a service - is assigned to one - and only one – industry activity code at the most detailed level, namely the sub industry that characteristically produces the product.

In many countries, companies are required to report production, purchasing and trade figures to the official/public sector for statistical purposes and for customs tariffs. The existence of a separate nomenclature code for an electric vehicle helps to pre-screen economic activities that are potentially sustainable. For most economic activities (products and services) there would not be a unique code that distinguishes between potentially sustainable and regular products and services. For example: coffee would have a unique code, but sustainable certified coffee would have the same code.

The second structural element and the determining factor of sustainability-related information are the taxonomies, which typically provide technical criteria, terminologies, thresholds, tools and/or labels to identify sustainable (or the extent of sustainability/greenness) activities, products or processes. Some of these taxonomies focus only on the environmental aspects (i.e. greenness), and many of them cover both green and social elements to different extents to classify the activities as sustainable.

Taxonomies can take the form of tools for broad target groups; for example, the EU Taxonomy is mainly designed for the financial industry, its regulators and the finance staff of companies or issuers of securities. Some green taxonomies take the form of ecolabels or standards, and these in turn are used by issuers and companies to highlight and communicate in an easier-to-understand-format the extent of greenness of their products and activities. Industry bodies or the official, public sector, and private entities develop criteria for these standards in collaboration with stakeholders. With the publication of the EU Taxonomy, investors are now expected to disclose how they are contributing to the achievement of climate and environmental goals. The EU Taxonomy can and will be used to determine the exposure of portfolios and benchmarks to the green economy. Increasing transparency from investors articulating the “green proportion” of their investment will contribute to further development of the green economy.

Taxonomies will make sustainable finance more accessible to investors as the standardized green definitions lower the barrier to entry for retail investor engagement in green, social and sustainability bonds. Investment funds and other products can be officially labelled as environmentally sustainable

with a sustainability seal or certification, for example when the constituents comply with certain green bond indexes, taxonomies, environmental and social good assessments and ratings, or standards.

Labelling process and standards can add an externally audited or verified process. Companies can label products or processes with, for example, audited eco-labels, Environmental Product Declarations or Environmental claims such as “recyclable”. However, there can be problems even with international standards such as ISO. For example, biodegradable plastics have been shown to resist breakdown for decades if not recycled under industrial composting conditions as. The Green Eligibility Working Group produced a separate document titled “Sustainability Standards and Labels - Overview for Green Bond Market Participants which seeks to provide market participants with guidance on the types of information to consider when determining their opinion on the relative strengths of a given environmental/green standard.

Because taxonomies often do not share the same or similar basis, this can lead to friction for the market participants to arrive at conclusions about the suitability of their activities, projects and products eligible to be funded by green financing. Taxonomies for the financial industry include the EU Taxonomy, People’s Bank of China, Green Bond Endorsed Project Catalogue, Climate Bonds Standard, Climate Bonds Initiative. In order to resolve frictions between these, market participants will want to understand if and how the various different nomenclatures and taxonomies can be compared and what their usability considerations are.

Financial Instruments

Green Bonds

Green, Social and Sustainability Bonds are financial instruments where the proceeds are exclusively assigned to projects that aim to address specific environmental, social or a combination of outcomes. *Green Bonds* are any type of bond instrument where the proceeds are exclusively applied to finance or re-finance projects with clear environmental benefits, and which are aligned with the four core components of the Green Bond Principles relating to the use of proceeds; the process for project evaluation and selection; the management of proceeds; and reporting. The European Bank for Reconstruction and Development has been a pioneer in the issuance of Green Bonds. *Social Bonds* finance projects that directly aim to address or mitigate a specific social issue and/or seek to achieve positive social outcomes, especially but not exclusively for a target population(s). Social Project categories include providing and/or promoting affordable basic infrastructure, access to essential services, affordable housing, employment generation, food security, or socioeconomic advancement and empowerment. *Sustainability Bonds* are any type of bond instrument where the proceeds are to be exclusively applied to finance or re-finance a combination of Green and Social Projects and which are aligned with the four core components of the GBP and SBP. They are all voluntary process guidelines; they all recommend transparency and disclosure and promote integrity in the development of the green, social and sustainability bond market by clarifying the approach for issuance of bonds.

The Green Bond Principles (GBP) promote integrity in the Green Bond market through guidelines that recommend transparency, disclosure and reporting. They are intended for use by market participants and are designed to drive the provision of information needed to increase capital allocation to such projects. With a focus on the use of proceeds, the GBP aim to support issuers in transitioning their business model towards greater environmental sustainability through specific projects. Issuance aligned to the GBP should provide an investment opportunity with transparent green credentials. By recommending that issuers report on the use of Green Bond proceeds, the GBP promote a step change in transparency that facilitates the tracking of funds into environmental projects, while simultaneously aiming to improve insight into their estimated impact.

The GBP provide high level categories for eligible Green Projects in recognition of the diversity of current views and of the ongoing development in the understanding of environmental issues and consequences, while liaising when needed with other parties that provide complementary definitions, standards and taxonomies for determining the environmental sustainability of projects. The GBP encourage all participants in the market to use this foundation to develop their own robust practices, referencing a broad set of complementary criteria as relevant. The GBP are collaborative and consultative in nature. They are updated typically once a year in order to reflect the development and growth of the global Green Bond market.

There are currently four types of Green Bonds:

- Standard Green Use of Proceeds Bond: a standard recourse-to-the-issuer debt obligation aligned with the GBP.
- Green Revenue Bond: a non-recourse-to-the-issuer debt obligation aligned with the GBP in which the credit exposure in the bond is to the pledged cash flows of the revenue streams, fees, taxes etc., and whose use of proceeds go to related or unrelated Green Project(s).
- Green Project Bond: a project bond for a single or multiple Green Project(s) for which the investor has direct exposure to the risk of the project(s) with or without potential recourse to the issuer, and that is aligned with the GBP.
- Green Securitised Bond: a bond collateralised by one or more specific Green Project(s), including but not limited to covered bonds and aligned with the GBP. The first source of repayment is generally the cash flows of the assets.

The cornerstone of a Green Bond is the utilisation of the proceeds of the bond for Green Projects. The GBP explicitly recognise several broad categories of eligibility for Green Projects: climate change mitigation, climate change adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control. Eligible Green Project categories include renewable energy, energy efficiency, pollution prevention and control, eco-efficient and/or circular economy adapted products, production technologies and processes, Green buildings, terrestrial and aquatic biodiversity conservation, clean transportation etc.

The net proceeds of the Green Bond, should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner, and attested to by the issuer in a formal internal process linked to the issuer's lending and investment operations for Green Projects. So long as the Green Bond is outstanding, the balance of the tracked net proceeds should be periodically adjusted to match allocations to eligible Green Projects made during that period. The GBP encourages a high level of transparency and recommend that an issuer's management of proceeds be supplemented by the use of an auditor, or other third party, to verify the internal tracking method and the allocation of funds from the Green Bond proceeds.

On a global basis, many different selection criteria can be used to identify economic activities, projects, products and assets, that could become eligible to receive green financing from green bonds or that could become part of green bond investment funds. A comprehensive Green Bond Framework is needed giving guidance on what is green and social (as appropriate for the issuer's case and context), in order to clearly and credibly communicate the issuer's environmental sustainability objectives and the process by which the issuer determines how the projects fit within the Green Project categories, the related eligibility criteria as well as any other process applied to identify and manage potential material environmental and social risks associated with the projects.

Green Bond market participants are increasingly looking for harmonized or comparable information to identify economic activities that could be eligible to receive green financing. They need this information to be able to implement their green policies and ambitions, develop products that will be eligible to receive green financing and comply with the local green/sustainable finance policies and regulations. Institutional investors need sustainability-related information for the implementation of

Responsible Investing strategies which are green, including various low carbon and decarbonisation risk mitigation strategies, exclusionary screenings, norms-based screenings, engagement and active ownership, best-in-class selection, and thematic investing. Investors also increasingly include environmental and social good considerations into the advice that they offer to individual clients. Investors may also want to know what proportion of the activities of an issuer is green, in order to add non-labelled bonds from issuers to their green bond funds. Investors also need sustainability-related information and definitions for disclosures (client and public reporting) and other non-financial disclosures, including for regulatory purposes.

The Green Bond market aims to enable and develop the key role that debt markets can play in funding projects that contribute to environmental sustainability. Eligible Green Project categories include:

- renewable energy (including production, transmission, appliances and products);
- energy efficiency (such as in new and refurbished buildings, energy storage, district heating, smart grids, appliances and products);
- pollution prevention and control (including reduction of air emissions, greenhouse gas control, soil remediation, waste prevention, waste reduction, waste recycling and energy/ emission-efficient waste to energy);
- environmentally sustainable management of living natural resources and land use (including environmentally sustainable agriculture; environmentally sustainable animal husbandry; climate smart farm inputs such as biological crop protection or drip-irrigation; environmentally sustainable fishery and aquaculture; environmentally sustainable forestry, including afforestation or reforestation, and preservation or restoration of natural landscapes);
- terrestrial and aquatic biodiversity conservation (including the protection of coastal, marine and watershed environments);
- clean transportation (such as electric, hybrid, public, rail, non-motorised, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions); • sustainable water and wastewater management (including sustainable infrastructure for clean and/or drinking water, wastewater treatment, sustainable urban drainage systems and river training and other forms of flooding mitigation);
- climate change adaptation (including information support systems, such as climate observation and early warning systems);
- eco-efficient and/or circular economy adapted products, production technologies and processes (such as development and introduction of environmentally sustainable products, with an eco-label or environmental certification, resource-efficient packaging and distribution);
- green buildings which meet regional, national or internationally recognised standards or certifications.

<u>Climate Financing</u>

There is considerable interest in climate financing including Carbon Markets and Net Zero Asset management and the approach that asset managers use for Climate Voting (i.e. climate-related proxy voting).

<u>Climate Voting</u>

There are four considerations that can affects the outcome of an asset manager's voting decision for climate voting: governance, interest alignment, merit-based evaluation, and transparency. Key to this are shareholder proposals that are explicitly climate focused, such as greenhouse gas reduction targets or reporting, but also extends to all other aspects of the business. There are various frameworks that asset managers can refer to such as the Climate Action 100+ Net-Zero Company Benchmark, Transition Pathway Initiative, Principles for Responsible Investment Making Voting Count, and Say on Climate. The 35 members of the United Nations convened Net-Zero Asset

Owner Alliance supports collaboration and action to decarbonize the real economy and are committed i) to transitioning their investment portfolios to net-zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial levels; ii) to establishing intermediate targets every five years; and iii) to regularly reporting on progress. In their document *Elevating Climate Diligence on Proxy Voting Approaches: A Foundation for Asset Owner Engagement of Asset Managers*, they set out the principles and considerations for asset managers.

As asset owners, whether as a member of a pension fund, citizen or private investor, we can all advocate for accelerated climate action; for example, voting to reach the goal of achieving net-zero emissions in an investment portfolio by 2050, with interim targets at 2025.

Through their scale and expertise, asset managers are strategically positioned to steward and select portfolio companies in a way that supports our personal net-zero ambitions. Recognizing that properly representing our long-term interests through proxy voting is a key element of the asset owner-asset manager relationship. Climate-smart active ownership and participation through proxies are important for investors as they enable a rapid transition to a carbon neutral economy and support decarbonising investment portfolios. In this way all parts of the value chain will start pushing in the same direction. Asset Managers have an important role to play in addressing both climate risks and opportunities, however, at the end of the day, they manage money for others and therefore alignment around the long-term interests of their clients and beneficiaries is essential.

Climate Insurance

With USD 30 trillion in assets under management and USD 5 trillion in world premium volume, the insurance industry holds around a third of global economic assets and liabilities on their balance sheets making it one of the largest global industries. As risk managers, insurers can also play a big leadership role in building climate-resilient communities and in accelerating the transition to a net-zero global economy.

Some of the world's leading insurers and reinsurers, are currently establishing the UN-convened Net-Zero Insurance Alliance (NZIA) under the auspices of UNEP FI's Principles for Sustainable Insurance (PSI). The seven companies involved in establishing the NZIA are AXA (Chair), Allianz, Aviva, Munich Re, SCOR, Swiss Re and Zurich. The NZIA has submitted a statement of intent to join the COP26 Race to Zero and become part of the GFANZ and is expected to be officially launched at COP26. The alliance has published the first comprehensive guidance for the insurance industry to identify and disclose the impact of climate change on their businesses. Over the past year, the group has collaborated under the auspices of UN's Principles for Sustainable Insurance Initiative to pilot groundbreaking methodologies that insurers can use to implement the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosure. Disclosing both the risks and opportunities faced by insurers from a changing climate in line with the recommendations in this framework allows insurers to build a picture of how their business will be challenged both now and, in the future,, and how to respond.

The overall aim is to develop consistent and transparent analytical approaches that can be used to identify, assess and disclose climate change-related risks and opportunities in insurance underwriting portfolios. Assessing climate change-related risks based on forward-looking information and scenarios is a central component of the TCFD's recommendations and is arguably the most challenging to implement. Potential climate change-related risks and opportunities that insurers could face can be classified into three categories:

- Physical risks related to changes in weather patterns, temperature and hydrological conditions.
- Transition risks as the world moves towards a net-zero emissions economy and related fundamental changes in, for example, energy, food and transport systems.

- Potential litigation risks pertaining to climate change and breach of underlying legal frameworks on both the business and corporate levels.

The insurance industry now needs to assess degradation to Nature as well as climate change risks in an integrated manner, not only at an underwriting level but also in terms of its investments. It is recognized that to do so is a difficult task and represents a long-term objective.

Climate Net Zero Financing

Achieving the objectives agreed in the Paris Agreement to limit global temperature increases to well below 2°C from pre-industrial levels and striving for 1.5°C will require ambitious actions from all strands of the economy: alongside governmental policy commitments and corporate action, financial institutions will need to adjust their business models in the short and long term and develop realistic strategies underpinned by robust, science-based targets and action plans. The window for action is small. To achieve the goals of the Paris Agreement, emissions must now halve every decade.
In April, on the eve of President Biden's Head of State Climate Summit, Mark Carney, the UK Prime Minister's Finance Advisor for COP26 and UN Special Envoy for Climate Action and Finance launched a global alliance bringing together existing and new net-zero finance initiatives into one sector-wide strategic forum called the Glasgow Financial Alliance for Net Zero (GFANZ).At the same time, the Un brought together 43 of the world's leading banks to form the UN-convened Net-Zero Banking Alliance.

Ahead of the UN Climate Conference (COP26), GFANZ will work to mobilise the trillions of dollars necessary to build a global zero emissions economy and deliver on the goals of the Paris Agreement. The new alliance will provide a forum for strategic coordination for the leaders of finance institutions from across the finance sector, to accelerate the transition to a net zero economy. Convened in partnership with the UNFCCC Climate Action Champions and the Race to Zero campaign, and the COP26 Presidency, initiatives in GFANZ require signatories to set science-based, interim, and long-term goals to reach net-zero no later than 2050 in line with Race to Zero's criteria. These goals are supplemented by member-determined short-term targets and action plans. The industry-led Net-Zero Banking Alliance, hosted by the United Nations Environment Programme Finance Initiative (UNEP FI) and co-launched with the Financial Services Taskforce (FSTF) of the Prince of Wales' Sustainable Markets Initiative (SMI), is the newest net-zero alliance. NZBA brings together an initial cohort of 43 of the world's biggest banks with a focus on delivering the banking sector's ambition to align its climate commitments with the Paris Agreement goals with collaboration, rigour, and transparency. All the banks that have signed the commitment will:

- Transition the operational and attributable GHG emissions from their lending and investment portfolios to align with pathways to net-zero by 2050 or sooner;
- Within 18 months of joining, set 2030 targets (or sooner) and a 2050 target, with intermediate targets to be set every 5 years from 2030 onwards. All targets will be regularly reviewed to ensure consistency with the latest science (as detailed in IPCC assessment reports).
- Banks' first 2030 targets will focus on priority sectors where the bank can have the most significant impact, i.e. the most GHG-intensive sectors within their portfolios.
- Within 36 months of joining, banks will set a further round of sector-level targets for all or a significant majority of specified carbon-intensive sectors, including: agriculture; aluminium; cement; coal; commercial and residential real estate; iron and steel; oil and gas; power generation; transport;
- The commitment is designed to ensure that banks engage with their clients' own transition and decarbonisation, promoting real economy transition rather than only financial sector withdrawal;
- Annually publish absolute emissions and emissions intensity in line with best practice and within a year of setting targets, disclose progress against a board-level reviewed transition strategy setting out proposed actions and climate-related sectoral policies.
- Take a robust approach to the role of offsets in transition plans.

NZBA joins three existing initiatives: the UN-convened Net-Zero Asset Owner Alliance (convened jointly by UNEP FI and the Principles for Responsible Investment), the Net Zero Asset Managers Initiative, and the Paris Aligned Investor Initiative. The Alliance's 37 members with over USD 5.7 trillion assets under management are demonstrating strong early leadership by already setting science-aligned targets for 2025. These will shortly be joined by some of the world's leading insurers and reinsurers in the UN-convened Net-Zero Insurance Alliance. By bringing together leading existing and new net zero finance initiatives in the Race to Zero together in one sector-wide strategic forum, GFANZ will catalyse strategic and technical coordination on the steps firms need to take to align with a net zero future. There are now guidelines for Climate Target Setting, which outline key principles to underpin the setting of credible, robust, impactful and ambitious targets in line with achieving the objectives of the Paris Agreement. The Net-Zero Banking Alliance will deliver internationally consistent guidelines and a global community, with local implementation also supported by country chapters, the first of which will be established by the UK Bankers for Net Zero.

Afterword

The range of new financial products entering the market is accelerating rapidly. The challenge now is to ensure that the enormous sums of monies that are being pushed into investments in climate and nature projects generate the outcomes we want. To do this, we all need to ask what our collective and individual voting rights are as the planet belongs to all of society.