FINANCE FOR BIODIVERSITY Initiative

Values-Based Pathways Toward Financial Materiality for Biodiversity

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About this Paper

This paper examines the origins of values and, in particular, values for nature. It looks at how nature values are embodied in guiding principles for society, and explores how some widely-held values have been material within the financial sector. Finally, the paper discusses emerging trends for how values can be harnessed to bring about a greater alignment between the moral imperative of biodiversity conservation and financial decision-making at all levels.

This paper is authored by James Leape of Stanford Woods Institute for the Environment and Morrison Mast of the Stanford Graduate School of Business, on behalf of the Finance for Biodiversity (F4B) initiative. We would like to thank all those who made valuable contributions and comments throughout the development of the paper, with particular thanks to Mark Halle and Simon Zadek. Errors and omissions remain those of the authors.

Comments and queries about this proposal, and other work of F4B, can be addressed to contact@f4b-initiative.net.

About Finance for Biodiversity

Finance for Biodiversity (F4B) aims to increase the materiality of biodiversity in financial decision-making, and so better align global finance with nature conservation and restoration. F4B is advancing five workstreams that create and amplify the feedback signals that increase the value of biodiversity in private and public financing decisions:

- **Market efficiency and innovation**: including a leadership role in the Task Force on Nature Related Financial Disclosure, and support to a number of data and fintech-linked initiatives
- **Biodiversity-related liability**: with a particular focus on the place of extended environmental legal liabilities for financial institutions, as well as financial policy and regulatory initiatives.
- **Citizen engagement and public campaigns**: advancing data and fintech-led instruments to catalyse shifts in citizen behaviour as consumers, savers, pension holders, insurers and capital owners.
- **Responses to the COVID crisis**: advancing measures and advocacy linked to stimulus and recovery spending, and the place of nature in sovereign debt markets.
- **Nature markets**: catalysing nature markets by developing new revenue streams and robust governance innovations.

F4B has been established with support from the MAVA Foundation, which has a mission to conserve biodiversity for the benefit of people and nature.

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Introduction

In 2009, it was reported that Mitsubishi, one of Japan's largest trading companies, was importing thousands of tons of bluefin tuna into the country and putting them into deep cold storage. At -60°C, they could be thawed in years or decades and sold in fish markets as good as fresh. Mitsubishi acknowledged the practice to *The Independent*, saying it froze tuna only "to even out peaks and troughs in supply."[1] But onlookers noted that the move to stockpile was consistent with the expectation that Atlantic bluefin stocks, under intense fishing pressure and already down 85% from historical levels, would become functionally extinct in the wild, causing the price to skyrocket. Mitsubishi's move was financially shrewd - they had seen the writing on the wall for bluefin, and effectively cornered 40% of the market. It was wholly indifferent to the intrinsic value of the species.

The Mitsubishi story may be extreme, but it is hardly unique. The principles undergirding modern finance have created a system focused narrowly on risk-adjusted returns, even when contrary to other deeply-held societal values. Values are the foundation of civil society, and have been at the root of all major social and environmental movements. While values for nature are found in most traditions and cultures around the world, protection of biodiversity has generally not been material to financial decisions. Repeated utilitarian approaches to valuing nature have failed, and a new paradigm is needed if we are to achieve the momentum necessary to address the collapse of global ecosystems and the wholesale extinction of species.

Here, we examine origins of values and, in particular, values for nature. We look at how nature values are embodied in guiding principles for society, and explore how some widely-held values have been material within the financial sector. Finally, we discuss emerging trends for how values can be harnessed to bring about a greater alignment between the moral imperative of biodiversity conservation and financial decision-making at all levels.

1. What are Values

1.1 Philosophical basis

Ever since Polish-American psychologist Milton Rokeach argues that "despite their undeniable theoretical centrality, values are perhaps the greatest black box in all of behavioural science."[2] Here we draw on social science literature to establish a common vocabulary for discussing values, with the ultimate aim of identifying values that are shared broadly among cultures and which could serve as pathways to build materiality for biodiversity in the financial system.

Rokeach defines a value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable."[3] While some values, such as loyalty, justice, or stewardship of nature, are universal, many of these values come in different flavours depending on context.

Values are *enduring* beliefs which can be descriptive, evaluative, or prescriptive. Values may be important to us personally, or to our relationships with other people. Values may be a means to an end e.g. fairness in expectation of reciprocity; or they may be desired states of being, in and of themselves (e.g. justice, equality).

Table 1: Classification Framework Kinds of Human Values (from Rokeach)

	Means-based (Instrumental)	Ends-based (Terminal)
Interpersonal	**Moral values** • Ethics that affect social interaction and arouse guilt or feelings of wrongdoing when violated • e.g. Acting with fairness, loyalty, honesty, reciprocity	**Society-centric values** • Desirable end-states for society • e.g. Stewardship of nature, world peace, brotherhood, racial justice, LBGT+ rights
Intrapersonal	**Competence values** • "Self-actualisation" values, not especially concerned with external, which lead to internal shame when violated • e.g. Behaving intelligently, rationally, imaginatively	**Self-centric values** • Desirable end-states for oneself • e.g. Salvation, peace of mind, leaving a legacy

Values in any of these categories could be asserted as material to financial decisions. Values are both intangible and inherently subjective, and can be manifested as individuals' preferences, needs, motivations, or as broader concepts (e.g. intergenerational equity).[4]

1.2. Neurological Underpinnings of Values

Neuroscience can illuminate the ways the human brain makes decisions, and the role of values therein. The field of neuroeconomics brings together concepts from psychology, behavioural science, and neuroscience to understand the emotional and rational motivations behind economic decision-making. Using functional magnetic resonance imaging (fMRI), researchers are able to track the shuttling of blood and oxygen to different parts of the brain as individuals make decisions. Researchers can provide controlled stimuli to participants, and then observe which neural pathways are activated when presented with a decision.[5] Such studies reveal that the emotional pathways through which values-driven decisions are processed (ventral striatum and the anterior insula) are often more predictive of action - especially when predicting national or global behaviour from small study samples - than more rational, deliberative, and reflective parts of the brain such as the medial prefrontal cortex, which integrates complex information to help compute value.

Studies suggest that the brain weighs values strongly into decision-making. Researchers like Nik Sawe at Stanford University use these methods to understand nonmarket valuation of nature and biodiversity. In a 2015 study by Sawe, participants' willingness to pay to protect natural resources scaled with the strength of positive emotional response (in the nucleus accumbens) to iconic landscapes, as well as negative emotional response (in the anterior insula) toward the destructiveness of proposed land uses (such as mining or residential development). Neuroimaging showed that while rational brain centres were involved in processing decisions, actual *willingness to pay* was most correlated with the activation of both positive and negative emotional neural pathways (those thought to be associated with values). On the other hand, the more deliberative centres pushed individuals away from giving money to natural resources.[6]

Often, when participants in such studies are asked to write a hypothetical cheque to protect Yosemite National Park, for example, they simply refuse to answer on moral grounds, or list a staggeringly high amount they could not actually afford. This is also a values-based decision, fuelled by "moral judgements of the sanctity of nature as a '*protected value*'" or values that resist trade-offs with other factors, such as money or other tangible rewards.[7] The results from both studies suggest that values, an already difficult-to-define concept, have a complex but highly material neurological basis at the individual level.

There is even evidence to suggest that neurological processes at the individual level may scale up to have population-level effects. Other studies on value-based messaging done with large sample sizes have suggested that these complex neural mechanisms are nonetheless reliably predictive of financial decisions at the population level, and may even help forecast market-level behaviour.[8]

1.3. Value-based movements

Over the past century, movements for women's rights, civil rights, racial equality, and LGBT+ rights have been based on societal values of equality, justice, peace, and brotherhood. These movements have drawn their basis from constitutional language and religious teachings, and have been fuelled by individual conviction of moral righteousness and fairness. They have led to action by governments, establishing protections in constitutional amendments and laws. Ultimately, these movements have resulted in action by companies, prompted by new legal requirements and by new expectations from investors, customers, employees, and the public.

The fight for rights for disabled people in the US is an illustrative example of a values-based social movement which holds many lessons for building materiality for a cause using values-based pathways. In the wake of the American Civil Rights Movement, people began to question the morality of laws and social norms that led to systematic disenfranchisement, and even human rights abuses, for people with perceived physical defects. Early activism yielded relatively small legislative victories, such as Section 504 of the Rehabilitation Act, which prohibited federal programmes from discriminating against people with disabilities. **Where there were gaps in the enforcement of these laws, people and organisations needed to make value-judgments themselves.** Transit authorities, for instance, had to decide whether or not to install costly accommodations for people with disabilities. This highlighted the need for comprehensive legislation in what had, over the past 30 years of sustained activism, become a bipartisan issue. The years of persistent organised advocacy punctuated by hard-won legislative victories had slowly shifted public perception on rights for the disabled from being an economic issue about welfare to being a moral issue about civil rights.

In July 1990, George H. W. Bush signed the Americans with Disabilities Act (ADA) into law, saying "today's legislation brings us closer to the day when no Americans will ever be deprived of their basic guarantee of life, liberty, and the pursuit of happiness." Based on the values of liberty and equality, it provided sweeping protections from discrimination, shaping the way buildings and infrastructure were built.[9] There are a few lessons here relevant to building materiality for biodiversity:

- Much as the ADA grew out of and built upon values that undergirded the American civil rights movement, so too might a robust biodiversity conservation movement capitalise on the momentum of a climate change movement which has successfully built materiality in the financial sector.

- One victory can inspire systemic change - over 180 countries have adopted legislation inspired by the ADA since the year 2000.[10]

- More tactically, values, both individually held and present in a population, must be evoked and called upon repeatedly and consistently over time to reach a tipping point in a social or environmental issue.

2. How is Nature Valued

2.1. Values associated with Nature

Nature-related values are reflected in knowledge systems across human history, from the classic (e.g. Aristotelian), to the Western (e.g. Secularism), Eastern (e.g. Animistic, Confucian), and traditional or indigenous (e.g. Guna, Kayapo) knowledge systems.[11] E. O. Wilson posited that these values are embedded into human behaviour at a biological level. He argues that, as a consequence of their own evolutionary history, humans have an innate tendency to seek out connections with nature - "the urge to affiliate with other forms of life."[12]

Stephen Kellert, who worked with Wilson to develop these ideas, laid out a conceptual framework describing people's feelings and beliefs about nature in nine basic values for nature.[13] These different value categories move beyond nature as a resource to encompass a richer spectrum of human activities associated with the natural world, which touch different aspects of society and are linked with certain beliefs or desired end-states.

Another way to conceptualise values beyond the utilitarian/preservationist dichotomy is as relational. The idea of relational values is based on the observation that "few people make personal choices based only on how things possess inherent worth or satisfy their preferences (e.g. instrumental vs. terminal). **Relational values are not present in things but derivative of relationships and responsibilities to them**."[14] For example, rather than a grove of trees possessing either intrinsic value (in and of itself) or utilitarian value (as timber), the grove could be a place of cultural significance to a specific group of people (cultural identity), a vehicle to

connect with others (social cohesion), or it could appeal to the moral responsibility for protection of living things. This lens is useful in considering how certain stakeholders value nature, and for broadening our sense of how nature can be valued by individuals and collectives of people.

Table 2: Basic Values of Nature (from Kellert)

Value Category	Relevant Aspects of Society	Related Human Values
Utilitarian	Resource Use, Medicine, Industry	Productivity, care for family, other competence values
Naturalistic	Recreation	Health, peace of mind, satisfaction, relaxation, intellectual stimulation
Ecologistic-Scientific	Sciences, Food/Agriculture, Medicine	Enhanced intellectual growth, advancement of society, creativity, imagination, innovation
Aesthetic	Arts, Design, Language, Clothing, Architecture	Beauty, inspiration, comfort, peace
Symbolic	Communication, Language, Storytelling	Meaning, tradition, creativity, intellectualism
Dominionistic	Religion, Law, Recreation	Endurance, mastery, challenge
Humanistic	Community & Familial Relations, Social	Bonding, sharing, cooperation, companionship, intimacy
Moralistic	Religion, Spirituality, Ethics, Law	Order, meaning, kinship, altruism, responsibility
Negativistic	Ethics, Resource Use, Food/Agriculture	Hostility, security, protection, safety, awe, survival

3. Where are Values for Nature reflected

3.1 In Religions, Traditions, and Philosophies

Most religions and philosophies around the world implicitly or explicitly place value on nature.

Many indigenous cultures have philosophies that are centred on reverence for nature and stewardship of natural resources. In the Guna villages of eastern Panama, for example, a commitment to stewardship of natural resources is embodied in moral strictures and folklore. In the town of Armila, for instance, people are discouraged from gathering the eggs of nesting female sea turtles because of folk tales that characterise male turtles as vengeful toward fishermen. Given the confluence of natural value and cultural heritage, humanistic arguments for the protection of indigenous cultures and land rights have been, and remain a promising values-based avenue for investing in the protection of biodiversity in targeted geographic areas.[15]

The Bhagavad Gita establishes the value of *ahimsa*, or 'no harm' to nature. Some scholars contend that this value is purely karmic (i.e. one's actions toward the environment will have either positive or negative consequences on one's karma, and ultimately one's path to *moksha*, the release from the cycle of death and rebirth); others interpret the text to hold that the value of ahimsa derives from the intrinsic value of maintaining the divine balance of the universe.[16] [17] Hindu teachings, placing a value on protecting all life, have spawned grassroots environmental movements, such as the anti-deforestation Chipko group[18], and have been enshrined in India's constitution (see below). They have also informed India's participation in international multilateral commitments to global environmental protection - the Hindu Declaration on Climate Change, a global call to action released in the leadup to the COP21 Paris negotiations, asserted that Hindus had "a dharmic duty for each of us to do our part in ensuring that we have a functioning, abundant, and bountiful planet."[19]

The Bible is often seen as proclaiming human dominion over nature. In the Encyclical Letter Laudato Si published in 2015, however, the Pope calls instead on moralistic and ecologistic-scientific philosophies by appealing to fundamental Christian values. He makes frequent references to scripture to highlight the interconnectivity between people and the natural world.[20] The Pope cites the 'principle of the common good' as an ethical imperative for attaining a state of the world which strives to achieve the best for all people, and thus, the environment. He also calls for "justice between the generations": "**The environment is part of a logic of receptivity. It is on loan to each generation, which must then hand it on to the next.**" He attributes the difficulties in taking up this challenge to an "ethical and cultural decline" and a "self-centred culture of instant gratification", a phrase which calls to mind the short-termism of the private sector.

3.2. In Founding Government Documents

Many founding government documents, especially those in countries rich in natural capital, emphasise the value of nature. The Namibian constitution calls for the protection of the "beauty and character" of the environment, and mandates the "maintenance of ecosystems, essential ecological processes and biological diversity of Namibia, and utilisation of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future." This language points toward an intrinsic value of nature.[21] **The Bhutanese Constitution establishes the Bhutanese people as "trustees" of the Kingdom's natural resources and environment, entrusting them with the protection of the environment for the benefit of future generations**.[22] Similarly, in India's constitution, its 1.3 billion citizens are called on "to protect and improve the natural environment, and to have compassion for living creatures." Costa Rica's constitution similarly provides that "all persons have the right to a healthy and ecologically balanced environment."

Ecuador's constitution takes it a step further, codifying the people's right to live in an environment that guarantees sustainability and a certain way of life.[23] The constitutional language references a Quechua philosophy (*sumak kawsay*) which roughly translates to "the good way of living" or "buen vivir", and emphasises a focus on community, sustainability, and cultural sensitivity. It calls on the state to apply "restrictive measures on activities that might lead to the extinction of species, the destruction of ecosystems and the permanent alteration of natural cycles" and even references the nation's "genetic assets." This example is remarkable in its break from a purely utilitarian conception of nature to one that emphasises nature's value to the advancement of science and human culture. It also includes indigenous philosophy to invoke broader human values such as community, compassion, and tradition.

In 2007, President Hu Jintao proclaimed that an "ecological civilisation" (shengtai wenming) was the vision for China's future, and the world's. At the 19th National Congress of the Communist Party in 2017, China's President Xi Jinping reinforced this vision, calling upon societal values of Chinese nationalism, international brotherhood, and stewardship for nature in stating that in "taking a driving seat in international cooperation to respond to climate change, China has become an important…torchbearer in the global endeavour for ecological civilisation."[24] Shortly after Xi's speech, the concept would be written into China's constitution as the ideological framework for the country's environmental policies, laws and education. "Ecological civilisation" establishes cultural and moral virtues as "key components that are inseparable from the more well-known technological, judicial, and political goals." The ecological civilisation represents a vision for a party-led utopia in which technology and science are deployed to sustain the natural environment as the economy continues to grow.[25]

3.3. In Online Identity

Values for nature are woven into peoples' identity. Some value nature as a refuge or respite from daily life, as treasured memories, or as home itself. Social media has opened up an unprecedented window into people's personal identities and the values that define them. Using machine learning algorithms, researchers can analyse photos and videos posted online to study the presence of nature in people's online identities and infer what values are associated with nature. A study across 185 countries found that nature was "more likely to appear in photos taken during a fun activity, honeymoon, or vacation" rather than daily activities, indicating an association with moments of peace, fun, and relaxation.[26] Studies in national parks used social media to associate protected areas overwhelmingly with positive emotions such as "joy, anticipation, trust, surprise", rather than negative emotions, highlighting public support for the societal value placed on nature protection.[27]

4. How Values for Nature have been brought into Decision-Making

So far, we have discussed the underpinnings of human values, how people value nature, and how those values have been codified and enshrined throughout human history. These values form the basis of principles which inform how people and organisations behave and interact with one other and the natural world. We now turn our focus to how values for nature and biodiversity have been translated into principles, laws, and corporate policies.

4.1. Principles and Key Proxies for Value Translation

Widely-held values form the basis of principles that are embodied in laws and norms of behaviour. For example, some actors in the private sector have a fiduciary responsibility, requiring them to act in the client's best interests, that embodies basic values of fairness, integrity, and honesty. This 'duty of care' is applied across many industries and facets of society. It requires that directors of a corporation must act with attention, watchfulness, and prudence.[28] It applies in many different industries where the safety or wellbeing of people is concerned, for example in medicine, in travel and hospitality, and in the airline industry. It imposes a special obligation on schools to protect their students.[29] Some have suggested that a statutory duty of care for nature could complement biodiversity conservation policy.[30]

The principle of 'do no harm' cautions against action if there is a risk of causing more harm than good. The principle is central to the Hippocratic Oath in medicine, but also applies to decisions

in fields such as cultural anthropology, humanitarian aid, journalism, and, more recently, data privacy.

On environmental matters, the 'precautionary principle' provides that, when in doubt, one should err on the side of protection of nature or human health. It states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[31] The precautionary principle is embodied in many environmental regulations, laws, and treaties, balanced in varying degrees against costs. The Stockholm Convention regulating persistent organic pollutants is one example, citing the precautionary approach to support a prohibition on production and use of some listed chemicals, and the application of "best available techniques" to control others. The precautionary principle was also cited in the preamble of the 1992 Biodiversity Convention, and some contend it is becoming a custom in international environmental law.[32]

4.2. Values for Nature in Law

Many existing laws embody values for nature. The value of biodiversity, specifically, is reflected in international and national measures to protect endangered species. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) states that species listed on its Appendix 1 may be traded only if trade "will not be detrimental to the survival of the species." The US Endangered Species Act similarly provides that government agencies must demonstrate that their actions are "not likely to jeopardise the continued existence" of any protected species.

The value of nature is embodied in a wide range of laws governing management of public lands - most strongly in the creation of national parks and other strictly protected areas - but also in a wide range of lesser protections. Recent campaigns, such as the Half Earth Project, which calls for setting aside 50% of the Earth's surface area for nature, and 30x30, which seeks protection of 30% of the Earth's land and waters, are working to expand those commitments.

Notably, these kinds of legal protections have also yielded international norms that have some influence in the private sector. Many companies would recognise a presumption against activities that would endanger a protected species or infringe upon a national park.

4.3. Values for Nature in the Corporate World

There are growing calls for companies to have purpose beyond just the product or service they provide their customers. One example is discussion of a shift from shareholder to stakeholder capitalism in corporate governance. In 2019, US Business Roundtable released a new *Statement on the Purpose of a Corporation*, signed by 181 CEOs from major corporations. Jamie Dimon, the Chairman and CEO of JPMorgan Chase, couched the discussion in terms of a "fraying" American Dream, stating that "major employers invest in their workers and communities because they know it is the only way to be successful over the long term."[33] This has sparked a heated debate about the shifting responsibility of corporations to move beyond short-term pecuniary motives, and to broaden the responsibilities of financial institutions to recognise and reward those that do so.

A growing number of jurisdictions have provided a new legal form for corporations that have an explicit mission to serve the public interest. These companies (called 'benefit corporations' in the US) set out to benefit workers, their community, and the environment, while also making a profit. Patagonia, a leading example, makes values-based appeals about the environment directly in its mission statement. Its mission is to "Build the best product, cause no unnecessary harm, [and] use business to inspire and implement solutions to the environmental crisis." Patagonia's core values include transparency, collaboration and improvement.[34] The company is known for its strong alignment of its operations, from product design to materials sourcing to human resources, even posting bail for employees who are arrested for peacefully protesting for environmental causes. Rose Macario, Patagonia's CEO from 2014-2020, said at a recent event: "I don't want to think about what happened in a [fiscal] quarter. I want to look into the eyes of my employee's child and say, 'What's going to happen in her lifetime?'"[35]

Whereas privately-held companies like Patagonia have latitude to act and espouse values that are not directly profit-maximising, public companies face stronger scrutiny from shareholders and the market's focus on quarterly returns. Nonetheless, some leading companies, often consumer-facing companies, have made impressive, values-based commitments. Unilever, a US$150 billion publicly-traded corporation which produces a broad assortment of household goods, sought to "decouple economic growth from environmental impact" with its 2010 Sustainable Living Plan.[36] The ambitious strategy called upon societal values of fairness and safety. It aimed to halve carbon emissions and focused on social, environmental, and economic challenges ranging from improved health outcomes for smallholder farmers and improved sustainable sourcing. By 2015, 'sustainable living brands' represented half of the firm's growth. In 2007, Marks and Spencer set out 'Plan A', expressing a commitment "to helping to build a sustainable future by being a business that enables our customers to have a positive impact on wellbeing, communities and the planet through all we do." A growing roster of companies, ranging from Mars to Tesco to Walmart, have made commitments in this vein.

5. How Values Are Made Material in Finance

5.1. Values in Finance historically

Financial dealings have long had values-based constraints. Fiduciary responsibility, discussed above, is one example. Another is the concept of usury, which refers to lending practices that unfairly enrich the lender at the expense of the borrower. In religious texts ranging from the Jewish Old Testament to the Buddhist Jatakas and Hindu Sutras, the charging of interest has been treated with disdain. Throughout history, many jurisdictions have imposed limits on the amount of interest that can be charged by lenders.[37] [38]

In Islam, the concept of usury is captured in *Riba* (the idea that one must work for profits), which can include a range of inequitable transactions, from overcharging to unequal exchange of certain commodities. In modern financial markets, the avoidance of *Riba* has led to the development of a variety of financial innovations to comply with sharia law, such as sharia-compliant bonds (sukuk*)*, and equitable risk-sharing financial vehicles (mudarabah). Bodies such as the Accounting and Auditing Organization for Islamic Financial Institutions have emerged as certifying agencies, and as mechanisms for accountability and transparency.

Notably, a broader set of values are also explicitly integrated into Islamic finance, which must comply with both religious (sharia) and secular law. “Islamic finance transactions must adhere to religiously permissible investment categories (halāl) and abstain from prohibited investment themes (harām). Halāl encompasses everything that is good for the community and does not cause harm, whereas the term harām encompasses everything that may lead to harm and have negative impacts on the community.”

The Islamic finance sector is growing at almost double the global rate[39], and experts suggest that sharia-compliant bonds (sukuk), combined with modern technologies such as blockchain, could contribute substantially to progress on the UN Sustainable Development Goals (SDGs).[40] Leaders in the Islamic financial sector have suggested that these broader values support, and indeed call for, a commitment to sustainability in lending and investment.

In the West, the values-based exclusion of certain activities or industries from investing portfolios is often traced back to Quakers and Methodists in the early 1900s. They developed ethical unit trusts that set moral parameters on their investments, excluding companies dealing in tobacco, gambling, or alcohol, now referred to as “sin stocks.” Today, the inclusion of non-financial factors is broadly referred to as Environmental, Social and Governance (ESG) investing,

and has led to a profusion of disclosure standards, metrics, certifying bodies and investment products.

Islamic finance and ESG investing provide some of the best modern-day examples of how values can be incorporated into the financial system, and even drive the direction of the industry.

5.2. The Role of Public Policy

Governments drive values into the marketplace through a broad array of public policy mechanisms (as discussed above). Laws protecting endangered species or sensitive habitats such as wetlands or mangroves can force societal value for those resources into business decisions. Restrictions on the use of toxic chemicals, or the discharge of pollution into air or water may also be underpinned, in part, by values for nature.

In some cases, **governments are directly targeting market levers**. In Europe, there has been increasing pressure on regulators to enact and enforce policy that prevents the sale of products such as soy, beef, and palm oil, which contribute to deforestation and the loss of biodiversity. Germany's Federal government, backed by social and environmental advocacy groups, has recently made a public commitment to create legislation to ensure due diligence along entire supply chains.[41] The results of such efforts, combined with government tools such as the EU Taxonomy for Sustainable Activities, which clearly defines what can or cannot be labelled as sustainable, will have material impacts on the way financial institutions report on and invest in activities that impact biodiversity.[42]

The government of California, for example, recently announced that it will ban the sale of non-electric vehicles by 2035. As the sixth largest economy in the world, California's policies could help drive electric vehicle (EV) prices down for the entire country, and even globally.

Public procurement can also play a significant role in introducing values into the landscape of the financial system. Sustainable public procurement, defined as "the process used to secure the acquisition of goods and services ('products') in a way that ensures that there is the least impact on society and the environment throughout the full life cycle of the product"[43] has been increasingly looked to as a way for governments to wield their purchasing power to influence risk-return profiles for new technologies, driving down costs and risks for investment from the private sector.

In Sweden, for example, municipal procurement policies were used to speed up adoption of electric vehicles. Despite higher costs and cultural, behavioural, and infrastructural barriers to adoption, the municipalities of Malmö and Östersund intentionally harnessed public procurement as a tool to "push the [electric vehicle market] forward." They did this by

proactively purchasing EVs for all administrative purposes, taking a loss in order to drive down the cost to the consumer in a bid to generate private demand because they "see it as the responsibility…to develop a market and diffuse EVs." This example represents a political values-based strategy to increase widespread adoption of an initially costly measure to protect the environment in the longer-term.

Taken into the realm of biodiversity conservation, this can be a particularly promising strategy in countries where the government consumes a significant proportion of the gross domestic product (GDP), such as the EU.[44] European governments have led the way in using public procurement policies to address deforestation, for example, mandating certified sustainable palm oil for use in food services and renewable energy production.[45]

5.3. Lessons from Climate Change

The narrative of climate change highlights some of the possibilities and challenges for making environmental values material in the financial system. Climate change was framed as a moral issue as early as 1992, where signatories to the United Nations Framework Convention on Climate Change (UNFCCC) agreed to "protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities."[46]

Financial institutions were slow to respond. In the early 2000s, campaigns and public pressure forced financial institutions to begin to take in account the potential reputational risk of high-pollution projects (e.g. coal-fired power plants).

Socially-responsible investment funds led early on by incorporating values-rooted narratives and strategies into their investment policies, despite little material impact on investment decisions and portfolio composition.[47] In 2005, asset managers published their portfolios' carbon footprints for the first time, and the issuance of low-carbon stock indices followed in 2008-09. Calls for disclosure led to the development of early accountability and tracking mechanisms. The Carbon Disclosure Project, started in 2002 to provide transparency to investors on corporations' emissions, has now grown to account for nearly 20% of the world's carbon emissions.[48]

The run-up to the 2015 COP21 in Paris saw notable efforts to bring climate into mainstream financial sector decision-making. Mark Carney, then governor of the Bank of England, argued that companies needed to have a plan for a fossil-fuel-free economy. Carney appointed Michael Bloomberg to head a Financial Sustainability Board to help financial markets understand the mounting climate change risks.

Today, leading actors in the financial system are increasingly vocal about the materiality of climate change, and the risks it poses both to society and to financial returns. The leader of the world's largest asset manager, Larry Fink of BlackRock, warned corporate CEOs that **"climate change has become a defining factor in companies' long-term prospects…and I believe we are on the edge of a fundamental reshaping of finance."**[49] Investment and adoption has been slow, however, and it's too soon to know whether we are entering a tipping point.

6. Emerging Trends for Building Materiality of Values in the Financial System

Below, we discuss trends across various industries and aspects of the financial sector where values have been shown to play an increasing role in decision-making, and which we believe have long-term potential towards building materiality for nature conservation and biodiversity.

6.1. Bringing Values into Equity Investing

As noted above, values-based investing has been part of the financial system throughout history. The rise of 'socially responsible investing' in the 1970s and 1980s mostly focused on exclusionary screening methods on specific social issues. This paved the way for concessionary investing in an increasingly diverse set of topics including environmental issues. A tipping point came with the 2008 financial crisis. The rise of ESG in the 2010s has represented the financial sector's attempts to rebuild trust in capital markets.

While age-old structural challenges persist, the financial sector's new focus on ESG has come to affect everything from board governance to consumer preference, and is opening up a multitude of values-based pathways towards materiality for biodiversity. Below, we explore pathways that could, and in some cases already are, being harnessed to build materiality for nature in equity finance.

6.2. Investment Screening

Socially Responsible Investment funds, now commonly called ESG funds, are the modern-day successor to the approach pioneered by the value-conscious Quakers and Methodists. While those early funds focused on "sin" stocks, SRI/ESG funds today address a broad array of social concerns. Some exclude whole sectors, such as coal mining, while others focus on identifying the best performers in each sector.[50] There is growing investor appetite for such funds. Morningstar reported a net inflow of US$21 billion into sustainable funds in just the first six months of 2020 (almost equal to total inflows for 2019).[51] The trend is bound to grow, as new

data are showing that ESG funds tend to outperform the market. Over the past 10 years, six out of 10 sustainable funds delivered higher returns than equivalent conventional funds.[52]

While this amounts to only ~2% of the "global biodiversity financing gap" recently put forth by the Paulson Institute[53], it remains a significant and new source of funding that the global conservation movement could not have foreseen even 10 years ago. Screening strategies based on issues with significant bearing on the destruction of nature could bring material change (see 'net-zero deforestation' below). It is up to the biodiversity conservation community, however, to work with standard-makers to determine which industries have an outsized negative effect on nature, and to recommend to asset managers that they be the basis of such funds.

6.3. Sustainability Indices

Sustainability indices track the ESG performance of all firms in a market to identify 'best in class' in each sector, creating an investable values-based index available to retail and institutional investors. The rising prominence and continual reassessment of companies listed on sustainability indices creates market pressure for public companies to meet sustainability criteria, so that when investors 'buy the market', they invest in their company. Such indices can thus help align management's fiduciary responsibility with sustainability compliance and performance.

The Dow Jones Sustainability Index Family, launched in 1999, employs a Corporate Sustainability Assessment in order to assess corporations across all industries with a set of both industry-*specific* and industry-*agnostic* questions that assess alignment with certain ESG criteria, as defined by RobecoSAM, a specialist investment firm focused on sustainability.[54] These criteria are revisited and updated periodically, with the 2020 updates to the Corporate Sustainability Assessment methodology including enhanced criteria for Sustainable Finance, and a call by RobecoSAM for financial institutions to play a role in "facilitating the transition to a low-carbon economy and stimulating sustainable development."[55] The assessment also takes into account certain industries' impact on biodiversity. In industries where biodiversity is listed as a criterion to consider (e.g. coal and consumable fuels, construction, metals and mining, electric and water utilities, paper and forest products, real estate, and homebuilding), the weight assigned to this criterion often represents 3-4% of the overall score.[56] Firms' rankings change as new issues, such as fossil fuel divestment, gain importance in the assessment, which can affect their attractiveness to investors. Recently, for example, companies generating more than 5% of revenues from coal were removed from S&P's Global ESG Index.[57]

6.4. Green Bonds

Green bonds are investment vehicles that finance environmentally-beneficial projects. The World Bank claims to have issued the world's first green bond in 2009.[58] Since then, the mechanism has expanded to include many different sectors and dimensions of social and environmental financing, from climate bonds, to blue bonds (financing marine-based carbon offsets through ocean conservation), to forest bonds which finance payments for ecosystem services projects.[59]

Demand is high. Moody's recently forecast that green bond offerings in 2020 would total US$175-225 billion.[60] Recently, Google parent company Alphabet issued US$5.75 billion in sustainability bonds supporting environmental and social initiatives addressing values-based issues ranging from racial equity to affordable housing and renewable energy.[61]

While green bonds are a promising and growing vehicle for investment in environmentally-positive outcomes, there is a significant lack of transparency into how funds are implemented, and what outcomes they have. As supply of these and similar vehicles grows to match demand in the coming years, transparency concerns will need to grow proportionately. Institutions like the Inter-American Development Bank and Nasdaq have developed transparency initiatives such as the Green Bond Transparency Platform and the Nasdaq Sustainable Bond Network to provide better accountability and long-term tracking of investment outcomes.[62] [63] Initiatives and products that combat greenwashing are underway, including blockchain-enabled mechanisms. 2019 saw the introduction of the first blockchain-enabled green bond, issued by BBVA[64]. While green bonds certainly have a role to play in bridging the biodiversity financing gap, there is significant work to be done in creating a stronger connection between funding and direct outcomes for biodiversity and nature conservation.

6.5. The Role of Institutional Investors

For some investment managers, fiduciary duty may not be limited solely to generating reasonable risk-adjusted returns. Public pension funds and endowments can have a broader mandate to take account of social values in their investments, and thus may offer a compelling avenue toward materiality.

6.6. Pension Funds

Public pension funds are some of the world's largest asset owners/managers, and some have begun to incorporate biodiversity-relevant ESG risks and considerations into their long-term investment strategies. The California Public Employees' Retirement system (CalPERS), for example, manages over US$400 billion.[65] The CalPERS Investment Office is guided by CalPERS' 'Investment Beliefs' and 'Core Values', which together constitute CalPERS's fiduciary duty.[66]

In its Investment Beliefs, CalPERS provides that "investment decisions may reflect wider stakeholder views, provided they are consistent with its fiduciary duty to members and beneficiaries." It lists biodiversity loss as a "natural capital" concern to weigh into investment criteria as part of managers' fiduciary duty.

For these public institutional investors, including both pension funds and sovereign wealth funds, public policy can drive consideration of values in investment decisions. In 2014, Norway signed the Amsterdam Declaration[67], and pledged in its national biodiversity action plan to promote "national commitments that encourage deforestation-free supply chains". This materialised in major institutional investment decisions to combat deforestation. In 2019, Norway's Government Pension Fund Global (GPFG), the largest sovereign wealth fund in the world (US$1 trillion in assets under management (AUM)) announced it had divested from more than 33 palm oil companies over "deforestation risks". In total, the GPFG sold positions in over 60 companies because of their effects on deforestation. In doing so, Norway hopes to set an example for other fund managers, as well as encourage banks in countries like Indonesia and Brazil to adopt zero deforestation covenants attached to loans for agricultural activities.[68]

In 2020, Democratic Senators in the US state of New Jersey introduced the Fossil Fuel Divestment Bill (Senate Bill S330), calling for the state's pensions to be divested from the fossil fuel industry.[69] The proponents contended that risk-adjusted financial returns could be higher with a sustainable investing strategy, and that the fund has a moral imperative to play its part in the movement away from fossil fuels. The state treasury has opposed the bill, citing risk of lower returns.

Advocacy organisations have begun to campaign for similar policy measures in other jurisdictions. Organisations such as 'Make My Money Matter' in the UK are calling for changes to investment criteria in public pension fund systems by appealing directly to the public's individual values, and harnessing support at the grassroots level.[70] According to CEO Tony Burdon, 70% of the British public want their savings to be invested for good and not to cause harm. More than half said they would save more if they knew their savings were doing good. Such organisations can drive change by making metrics available to consumers, and providing

services for people to switch bank accounts to those that provide greater transparency, and a broader range of options for socially- and environmentally-responsible investing.

6.7. University Endowments

University endowments represent another large class of institutional investors that are increasingly integrating ESG metrics materially into investment decisions. Activism by students and, in some cases, alumni, have persuaded many universities to take more account of environmental concerns, and particularly climate concerns, in investment of their endowments. Some have divested of holdings in fossil fuel companies. Others have created funds to invest proactively in green companies. Arizona State University, for example, recently established a US$100 million Sustainable, Responsible, and Impact investment fund. At the University of New Hampshire (UNH), years of student-led conversations on responsible investment led to the establishment of an ESG fund which has since grown to represent 17% of the endowment's AUM. Values-based investments can also originate from restrictions from individual donors. In 2012, North Carolina State University received a donation of US$50 million from a donor who stipulated the fund needed to be invested in a "socially responsible fashion", and led NC State to develop an ESG investing strategy. In both the NC State and the UNH cases, these funds outperformed their fund-specific benchmarks, as well as the wider endowment pool. In fact, a growing body of evidence shows that university endowments' ESG funds consistently perform just as well, and often better, than traditional funds.[71]

6.8. Foundations

Foundations have always been a leading actor in financing biodiversity conservation, and have built up a massive knowledge-base on the effectiveness of conservation interventions, as well as a detailed map of where investment is needed. Beyond status-quo grant making, foundations with biodiversity-focused programmes or expertise can also help advance ESG-driven investment in biodiversity in the following ways:

- Guiding impact investors on how to get the biggest 'impact bang for their buck', along with metrics to track conservation outcomes;
- Bringing new investors to the table, and fostering the creation of investing syndicates that share investment theses; and

- Providing grants or patient capital in the form of Program Related Investments (PRIs) that can help de-risk projects for investors.

6.9. Impact Investing

Impact investors seek to generate social or environmental impact that fits a values-based investment thesis, alongside a financial return. Often, impact investments come with the expectation that the return will be lower than market rates, but they vary in how much lower is acceptable. In a concessional investment, a lower return is considered the cost of impact, but investors still have to balance impact against risk and liquidity, and this balance varies widely depending on goals of the investor.

The past 10 years have seen rapid growth in this sector: a study by the Global Impact Investing Network found that as of 2020, there exist 1,340 organisations dedicated to impact investing. They account for US$502 billion impact investing assets under management globally, the majority being accounted for by asset managers (65%) and foundations (21%).[72] In 2014, The Nature Conservancy (TNC), estimated that US$23 billion 'profit seeking dollars' flowed into biodiversity between 2009 and 2014. In 2018, NatureVest, TNC's conservation investing unit, reported US$1.3 billion in committed capital to biodiversity-positive investments over its six years of life.[73] TNC reports that many of these biodiversity projects had difficulty meeting the financial return expectations of investors.

Generating a financial return from a project that has a net-positive impact on nature requires thoughtful structuring of investment vehicles. In many projects, impact investment may be one layer in a capital stack that includes grant funds from government or philanthropy, first-loss money from more concessional investors, and funds from investors that expect market returns.

Often, investments also depend on a regulatory environment that incentivises responsible resource use. For example, investments in 'CleanTech' that focus on reducing greenhouse gas emissions are an active domain for impact investing. They often rely on a regulatory backdrop that incentivises low-carbon technologies (e.g. feed-in tariffs or cap-and-trade programmes); or the expectation that future regulations (e.g. a price on carbon emissions) will increase costs of status-quo technology. Many potential solutions to the biodiversity crisis are simply awaiting a regulatory environment that would make them viable; for instance, if a price on carbon were instituted within a country, investments in nature-based climate solutions (e.g. REDD+ projects) would likely represent the most cost-effective way of reducing greenhouse gas emissions.

One of the main challenges for impact investing in biodiversity has been deal flow. Investors complain of a lack of 'bankable' projects, and that often conservation projects are simply too small to be taken on by large investors. In addition, biodiversity projects often are relying on the creation of novel instruments, and so pilot projects are often necessary to prove concepts. Many initiatives have struggled to scale successful pilots to broader application.

It is also difficult to measure impact. While many biodiversity projects report on the United Nations Sustainable Development Goals (SDGs) that their projects touch, it is often difficult and expensive to quantify conservation outcomes, or to attribute outcomes to a specific investment. Some initiatives have set out to tackle this challenge. One example is the Partnership Biodiversity Accounting Financials, started by ASN Bank in the Netherlands and supported by other mainstream financial institutions.

Biodiversity objectives are also typically one dimension of a broader set of impact objectives, including climate, food security, and development. NatureVest's deals, for example, focus on sustainable food systems, sustainable seafood, and projects that provide clean water and have positive environmental benefits. Returns from these projects come from a range of sources, such as sale of conservation easements, sustainable resource utilisation, and carbon credits. It can be difficult to link such outcomes to biodiversity-specific KPIs.

6.10. Accounting for Impact

All of the above ESG investment strategies hinge on the ability of managers to assess the social and environmental impacts of their investments. The Sustainability Accounting Standards Board (SASB) and the Global Reporting Initiative (GRI) were created to increase transparency to investors and the public - allowing them to assess the performance of individual firms, and to better understand the risks associated with different sectors. The goal is to spur better management, by elucidating how each firms' sustainability performance compares to its stated goals and its competitors, and to enable money managers to align their investments with their values or interests.

As asset managers seek to incorporate ESG risk into financial decisions, the need for standardisation will only increase. This presents an opportunity for collaboration between ratings agencies and the biodiversity conservation community, whose work on conservation science can inform standards. Currently, organisations like GRI use the IUCN Red List and UN Convention on Biological Diversity criteria to determine the impacts of reporting organisations on population declines and natural recruitment.[74]

6.11. Linking Values to Executive Compensation

Linking pay to ESG performance is a powerful way of demonstrating to managers that an organisation's stated values and goals are not merely promises. Moreover, values-linked bonuses are a promising mechanism to advance progress on corporate social responsibility (CSR), including conservation of nature. There have been a variety of efforts made to build alignment between values-based targets and the actions of directors and managers by linking compensation to ESG metrics. Large companies such as Mars Inc. have linked executive pay to ESG goals in order to "align management's mind-set with the company's ESG strategy."[75] Royal Dutch Shell announced in 2018 that it would "link executive remuneration to short term targets to reduce the carbon footprint" of its products. In 2019 it announced that 'sustainable development' accounted for 20% (10% safety and 10% environment) of Shell's Executive Scorecards.[76] Progress on these goals would ideally translate into a greater annual bonus for executives, and could serve as an effective incentive to move the needle on progress toward value-based corporate goals.

While there are some success stories, these aligned incentives strategies can only be effective insofar as the goals are: 1) properly defined; 2) trackable; 3) aligned with the business' core strategy; and 4) within the control of the managers responsible for achieving them. The above example of Royal Dutch Shell, while promising, is also complicated by the fact that the tranches of executive compensation tied to ESG goals are effectively outweighed by those incentivising shareholder value creation and cash flow - both of which are currently driven by selling more fossil fuel. This raises an important question about which stakeholders' views and needs should be taken into account when deciding on these goals. Should this be set by the board's compensation committees, or should a broader spectrum of stakeholders (the public, regulators, employees, customers) be taken into account?[77]

In the finance sector, the purported immateriality of nature conservation and sustainability goals may pose a barrier to employing this strategy broadly. An asset manager from Hermes Investment Management was quoted by the Wall Street Journal as saying: "Executive remuneration should incentivise the right behaviour from management and the right business strategy from the company"[78] meaning that organisations will most effectively achieve ESG goals through this method if the ESG values are aligned with corporate strategy. Principles for Responsible Investment (PRI), led by the UNEP Finance Initiative and UN Global Compact, found that across extractive industries "the integration of ESG issues into executive pay is in its infancy, and there is considerable scope for investor engagement to improve practice and disclosure

across all sectors."[79] The same is true for the finance sector, and more work is needed to create effective incentives structures that support the conservation of nature.

6.12. Empowering Consumers

New tech-enabled financial tools and novel banking models are increasing the potential for individuals to more directly bring their values to bear into financial decisions and investments.

6.13. FinTech

The past five years have seen hundreds of financial technology (FinTech) start-ups vying for market share and partnerships with traditional banks and central banks. Entire economies are transitioning to using digital payment platforms for everyday purchases. In China, services like Alipay and WeChat Pay are more common than cash.

The rise of digital payment systems provides new opportunities to enable consumers to act on their values. Several start-ups are offering tools to allow consumers to analyse purchases in real-time and make more informed decisions at the checkout counter. Sweden-based Doconomy allows consumers to track their carbon footprints, with internal systems for purchasing offsets.[80] Doconomy's application has been scaled up through a partnership with MasterCard.[81] Similar tools are being developed by US-based Joro, Germany-based Klima[82], and Finland-based My Carbon Action.

New user-friendly micro-investing and brokerage platforms such as Robinhood can help democratise access to capital markets and day-trading. Through such platforms, individual investors entering the world of retail investing are presented with options to invest in values-focused mutual funds or Exchange Traded Funds (ETFs). It is not hard to imagine how an application like Doconomy could help guide these investors even as they choose individual stocks.

Other digital applications are making it easy for customers to contribute to conservation efforts. In Indonesia, where waste management infrastructure cannot adequately capture the flood of plastic waste coming from consumers, initiatives like PlasticBank encourage the collection of plastic waste from the environment in exchange for digital currency, which can be used to pay cell-phone utility bills, increasing rural income and facilitating access to the digital domain.[83] In China, financial giant ANT Financial leveraged consumer sentiment to simultaneously encourage

environmentally-responsible behaviour in cities, and replant distant forests. The Ant Forest Initiative awarded 'green energy points' to consumers who took steps to reduce their emissions (riding a bike, choosing environmentally-sustainable products). Once a certain threshold was reached, Alipay would 'match' the consumer's commitment by replanting a tree in northwest China. According to ANT Financial, the initiative has replanted 112,000 hectares of forest and created 400,000 job opportunities.[84]

6.14. Values-Based Banking

New models of banking are allowing consumers to put their money where their values are. The concept of values-based banking as a way to bring values into finance has been explored in depth by the UNEP Inquiry. According to the inquiry, The Global Alliance for Banking on Values has identified over 2000 banks with assets of US$600 billion dedicated to "positive financial innovation focused on meeting human needs in the real economy."[85] Such banks subscribe to a certain set of principles, including triple-bottom-line business models, and can be specific to geographies, communities, or faiths. Models like this present a potential path to investing in sustainable livelihoods in areas of high biodiversity. For instance, green banks that selectively finance sustainable agricultural practices in areas with strong deforestation pressure could have material impact on the deceleration of land degradation.

6.15. Valuing Natural Capital

Natural services, ranging from pollination of crops, delivery of clean water, and natural cooling of cities have been largely treated as free and inexhaustible by the financial system and the private sector. The concept of ecosystem services seeks to incorporate the myriad contributions of natural assets (e.g. wetlands, mountains, forests) to the economy, and has proven to be a viable and increasingly mainstream foundation for the integration of nature conservation into financial markets.

Valuation of ecosystem services methods provide a framework by which conservation project developers can make a business case for investment in natural capital. It has been used to make the case for investment in forest conservation to safeguard water supplies, and for investment in wetlands for water quality and flood protection. To take one example, the Forest Resilience Bond (FRB), an investment product created by Blue Forest Conservation and the World Resources Institute, relies on valuation of ecosystem services to determine the monetary value of increased streamflow and decreased wildfire risk that result from forest restoration activities.

The valuation illuminates how forest restoration activities can either generate revenue or decrease costs for beneficiaries that rely on this natural capital (in the case of the FRB, electric utilities and water companies), who then provide contractual "payments for ecosystem services" which can be packaged and issued as an investable bond.[86]

In China, the concept of natural capital has been used to create the Gross Ecosystem Product (GEP), a measure of economic activity akin to Gross Domestic Product. The GEP aims to capture nature's total contribution to a province or nation's economic activity in a single dollar figure that can be weighed in economic policy decisions. The metric, developed by Stanford University's Natural Capital Project[87] and the Chinese Academy of Sciences, was illustrated in a study in Qinghai Province, China. Researchers took into account the aggregate value of water, biodiversity, sandstorm prevention, flood mitigation, and ecotourism services provided by nature, and estimated an annual GEP of 185.4 billion Yuan (~US$27 billion) for the province in the year 2015. The concept of GEP has gained traction more broadly in China, where GEP is being used to stimulate a transition to ward "inclusive, green growth,"[88] in keeping with China's most recent Five Year Plan and its new 'Ecological Development Strategy.'[89]

The GEP, which consolidates a variety of ecosystem services into one metric, could potentially be considered as akin to ESG metrics already being used in the impact investing sector, such as TPG RISE Fund's 'Impact Multiple of Money' (IMM)[90], which consolidates various 'impact' factors into one dollar figure. While the main translation mechanism enabled by ecosystem services is of utilitarian value, this concept could be extended to help quantify aesthetic, humanistic, and moral values of nature to society for ESG-focused financial vehicles.

One new initiative seeks to 'securitise nature by turning natural capital into a tradable commodity. The Intrinsic Value Exchange (IVE) is creating a marketable security based on natural assets. The exchange allows a landowner to put his land into a 'Natural Asset Company' that can be valued through the assessment of monetised revenue streams and ecosystem services. The company can then be taken public, with shares traded on the exchange, in partnership with a major global stock exchange.[91] IVE is currently seeking regulatory approval to bring natural asset transactions to capital markets.

Such approaches to commodify nature-based public goods have traditionally relied on regulatory enforcement in order to hold companies accountable to the stewardship of the shared resource in question (e.g. cap-and-trade for climate change, US Clean Water Act). With the definition of fiduciary duty expanding to encompass ESG concerns, however, the wealth of evidence and information undergirding the natural capital valuation approaches could be considered a boon - or even a competitive differentiator - to financial industries like private equity, where asset managers seek out 'blind spots' in the market to craft novel investment

strategies. As Hiro Mizuno, Chief Investment Officer of Japan's US$1.4 trillion Government Pension Investment Fund states: "The lack of information can offer asset managers a unique chance to create new opportunities and differentiate their role. Asset managers can use the lack of standardised and consistent ESG data as an opportunity to generate extra returns to their clients."[92] Mizuno has been outspoken in calling for systemic change to the finance sector to combat climate change and biodiversity loss.[93]

6.16. Social Movements

Contemporary values-based social movements relating to biodiversity, especially youth movements, have the potential to shift risk profiles for investors and financial institutions.

The first digitally-native generation, GenZ (those born between 1997 and 2012) shows an increasing focus on the environment as the top social priority they want companies to address.[94] A 2019 study found that 'purpose' was the prevailing value that characterised this generation, and disproportionately predicted financial decisions and purchasing behaviour as compared to other age groups. Most learning about environmental issues came through social media channels, namely YouTube and Instagram.

This commitment can form the basis for grassroots activism. Extinction Rebellion (XR), for example, is a decentralised civil disobedience movement that advocates for action on climate change, and specifically on what they call the "Ecological Emergency". Protests in the UK have focused specifically on the financial sector, with protests at Bank Junction in London targeting banks like Barclays and HSBC, which collectively lend over US$100 billion to fossil fuel companies. The demonstrations resemble New York's 'Occupy Wall Street' of 2011 in that they have garnered widespread media attention, and refocused the discourse around the finance sector's responsibility for financing socially- and environmentally-destructive activities. While too soon to know whether XR will yield significant changes in the financial sector, the organisation has reshaped the narrative on environmental responsibility, and shone a harsh light on major financial institutions.

Since 2018, school-age children from over 150 countries have been staging peaceful school walkouts against a lack of action by governments and industry on environmental issues. The organisation 'Fridays for Future' provides guidelines and tracks assemblies. It has registered protests in 3,500 locations around the world. Beyond generating public attention, one could imagine that school strikes could serve as fuel toward consumer-driven movements to bring nature values into financial decisions, if children's engagement inspires their parents to act.

Campaigns by XR and student activists have spotlighted financial institutions that support industries with high biodiversity impact, such as agriculture and mineral extraction. 47% of 18-24 year-olds polled in the UK and 37% of those aged 25-49 expressed strong or moderate support for XR.[95] Extinction Rebellion calls not only on nature-related values, but appeals to causes like industrial workers' rights, or the morality of the London Stock Exchange Group trading in "sacred lands, water and heritage of the Global South."[96] The recent wave of school strikes focus on 'MAPA' which stands for 'most affected people and areas', and appeals to values that transcend a pure environment focus to include values of global unity and humanitarianism.[97] Recent events such as the investor-demanded resignation of mining giant Rio Tinto's CEO over the destruction of a 46,000-year-old sacred indigenous site in Australia demonstrate that moral positions resonate with the public enough to be material to the investors that finance these industries.[98]

6.17. Net Zero Deforestation Movement

The Net Zero Deforestation pledge is an example of a consumer demand-driven, values-based argument for corporate action, with potential applications to the financial sector. In 2010, hundreds of companies committed to a goal of net zero deforestation by the year 2020. This action represented a broad commitment by a pre-competitive coalition of companies, initiated by the Consumer Goods Forum and subsequently broadened to include NGOs and forest countries in the Tropical Forest Alliance (TFA). The companies committed to shift their sourcing to deforestation-free palm oil, soy, beef, and paper by 2020. There has been some progress, but none of the signatories are on track to meet the goal coming due this year. They have varied significantly in the seriousness of their commitments. But even the most committed have run up against the deep challenges of addressing deforestation in these sectors.[99] A recent recommitment in TFA sets out to deepen efforts, and to create more transparency around companies' performance.

The finance sector has been slow to act on this issue. In 2014, through the Banking Environment Initiative, seven leading banks committed to zero net deforestation by 2020. Few banks followed. A 2019 survey of the 150 most influential financial institutions by Global Canopy found that none had strong deforestation policies in place, and nearly two thirds had no deforestation policy at all. The catastrophic fires in the Amazon in 2020 sparked some action. In September 2020, 230 institutional investors signed a letter calling for action to combat fire. They threatened to divest over US$5 billion in investments in Brazilian enterprises, and to offload Brazilian bonds by the year's end.

7. Challenges

The Sustainable Accounting Standards Board (SASB) was created nearly a decade ago to establish standards for companies to assess their performance against ESG commitments. It produces a 'Materiality Map' outlining what issues are material in each sector. It is a stark reminder of the challenge we face. According to SASB, not one of the environmental issues it tracks, including 'ecological impacts', are likely to be material for financial firms - for asset managers, banks, consumer finance, insurance, investment banking, mortgage finance, or securities exchanges.

We are not here attempting a comprehensive catalogue of the challenges of making nature values material. There are obvious threshold problems. 'Biodiversity' can be an arcane concept for most people. And it is remote: the richest biodiversity resources are far away, and our impacts on biodiversity are often hidden by the opacity of global supply chains. Biodiversity or nature are also more difficult to bring into decision-making. Climate change, for example, has a simple and universal set of metrics (CO2 concentrations or emissions). Recent efforts to demand 'zero deforestation' in global supply chains have had their challenges, but one strength has been a demand and a metric that were, at least on the surface, relatively simple and intuitive.

These challenges are compounded, of course, by the relative invisibility of finance. Where progress has been made in driving nature values into private sector decision-making, it has come from policy action, or in linking market products (paper, fish, KitKat bars) to damage to nature, and finding ways to hold consumer-facing companies to account.

8. Opportunities

Over the course of history, social movements have repeatedly brought human values to the fore, and gained recognition and protection in policy and norms, and in business practice. Those movements have tended to build over decades. And they have often leveraged the progress of their predecessors – much as campaigns for the rights of the disabled were inspired by and founded on the principles and momentum of the civil rights movement.

One can argue that society's value of nature has been building similarly. There is growing global concern, and one might suggest that it is tracking and perhaps even leveraging progress on climate change. Over the past few decades, we have seen a steadily (albeit very slowly!) expanding circle of protection, embodied in legal protections, in global norms, and in private sector commitments. Protected areas safeguard highly valued swatches of nature. There are legally protected park systems in most countries, and a relatively strong global norm, at least

among international actors, against infringing upon those protections. Similarly, there are, in many places, quite strong protections for endangered species, often without regard to economic tradeoffs, and also relatively strong global norms against actions that would adversely impact those species.

Today, one can argue that the rise of concerns and awareness about destructive fishing, deforestation, and damage to sensitive habitats such as wetlands, mangroves and coral reefs, are indicative of emerging norms that reflect, in part, human values for those resources. In some cases, those concerns are also reflected in laws, like the Brazil Forest Code, for example, which requires preservation of large proportions of forest on private lands.

To be sure, this circle of protection is expanding far too slowly, but there are opportunities to accelerate. Perhaps most important is the evidence touched on above that an emotional/moral connection to nature activates decisions, along with the evidence of the passion for this cause among Gen Z.

We have seen the potential for such concerns to translate into change. The recent histories of action on climate change, deforestation, and fishing are instructive. Early campaigns created reputation risks for big actors – whether multilateral development banks or multi-national companies – and yielded commitments. Innovations, like ESG certification, and vehicles such as green bonds, provided tools that could bring values into markets.

As markets have shifted, there has been growing pressure and opportunity for governments to step up through policies, procurement, and investments. Government policies define markets, and thus shape rules and incentives for finance. Policies such as feed-in tariffs for renewable energy, fuel-efficiency standards, or wetland protections have all shaped investment opportunities and constraints. More recently, trade rules requiring safeguards against bycatch in fisheries, and deforestation in palm oil production, represent some of the most effective values-based restraints that govern investment.

Public procurement can be a powerful tool, creating demand for new technologies or new practices, and helping to both shift market norms and drive down costs. Governments have used procurement to build the market for low-emission and now electric vehicles. Some governments are also using procurement to build markets for sustainably produced foods, acting on nature-focused values.

Governments are also major investors in their own right. Sovereign wealth funds and public pension funds are among the largest institutional investors in the world. Many have fiduciary responsibilities that are cast more broadly, obliging them to secure a reasonable financial return

but also to support societal values. And governments are in some cases enacting policies that require action on nature-focused values.

While governments have these several avenues for action, there are also expanding outlets for members of the public to act directly on their concerns. The radical transparency represented by websites like Global Forest Watch and Global Fishing Watch, allows buyers much more visibility over the provenance of goods in commerce. A growing number of initiatives capitalise on this information to provide consumers with new tools for rewarding companies that protect nature and punishing those who don't – through social media and campaigns, and through apps to guide purchases.

Members of the public are also important in more directly guiding investment. They are vital stakeholders in pension funds, and some evidence indicates the potential for broad support to pension funds that invest in a way that reflects social values including nature values. And FinTech innovations are making it ever easier for consumers to invest in the stock market directly, and thus to choose socially responsible options and translate their values into direct investment in nature, as in the ANT forest initiative.

From the examples described in this paper, it is apparent that to make nature-related values more material to decision-making in the finance sector, it will be important to find ways to fuse causes and to fuse values and economics.

While values for nature have sometimes driven finance decisions on their own - as in the protection of a national park, for example, or an endangered species - more often, it has been important that nature values are linked to other social concerns. Biodiversity conservation can (and must) link to social justice, in particular to safeguarding the cultures, traditions, and rights of indigenous communities. Nature and climate change are of course linked in nature-based solutions. Nature and food security are similarly natural partners. This is not to suggest that there are no tensions among those causes, but rather that finding common cause will be crucial.

The history of climate change action is a reminder of the importance of finding ways to link values with more traditional economic or financial concerns. For climate, a values-driven concern about future generations gradually merged with a growing concern about the financial risk of investments in industries dependent on fossil fuels, or particularly vulnerable to climate change impacts. For biodiversity, perhaps there is a parallel possibility – a values-driven concern for nature that can merge with the growing power of natural capital as a way of capturing the economic value of the many services nature provides. This would provide both an economic foundation and impetus for action.

Finally, we suggest that in looking at how values could be brought into financial decision-making, it is important to open the lens to consider the moral-political-economic framework that defines this debate. The current framework - neoliberalism - was established only a half-century ago - replacing the Keynesianism of the post-war era - through a concerted effort, both intellectual (e.g. Milton Friedman) and political (e.g. Thatcher and Reagan). It proclaimed the primacy of the market, and the mandate that corporations focus singularly on maximising shareholder value. It is a fundamental obstacle to bringing nature values into finance. And just as neoliberalism was consciously, proactively imposed, it is important to be open to the possibility that it could be consciously, proactively replaced.

Margaret Levi posits that a "moral economy", which recognises the "extra-market and reciprocal rights and obligations" that bind society, is not out of reach, and could pave the way to a new set of values that undergird political and social institutions. In this new paradigm, a combination of widespread mistrust in large financial institutions, as well as the existential threat of natural collapse could well figure into the update of the social contract.[100] Such a moral economy should demand greater transparency, accountability, and effective regulation of the institutions that affect our natural capital.

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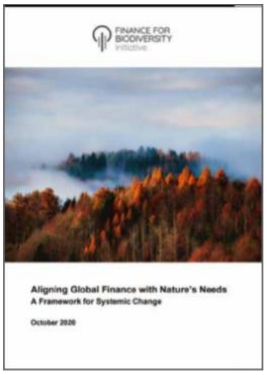

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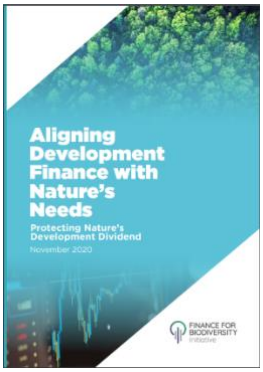

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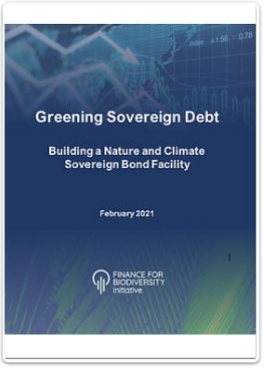

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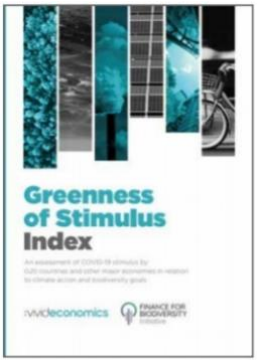

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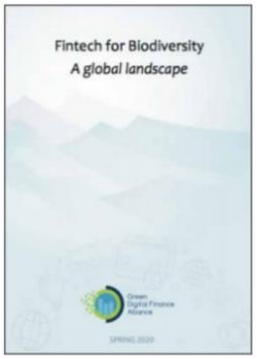

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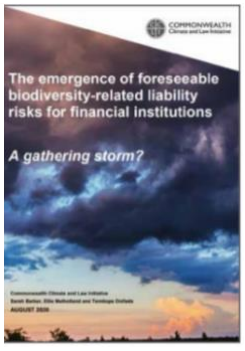

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References

[1] Hickman, B. M. (2011, October 23). Revealed: the bid to corner world's bluefin tuna market. The Independent. [Link]

[2] Rokeach, M. (1973). The Nature of Human Values. Free Press.

[3] Ibid.

[4] McLaughlin, B. (1965). Values in Behavioral Science.: Vol. 4:3 (pp. 258-279). Journal of Religion and Health.

[5] McClure, S. M., York, M. K., & Montague, P. R. (2004). The Neural Substrates of Reward Processing in Humans: The Modern Role of fMRI. The Neuroscientist, 10(3), 260–268. [DOI]

[6] Sawe, N., & Knutson, B. (2015). Neural valuation of environmental resources. NeuroImage, 122, 87–95. [DOI]

[7] Sawe, N. (2017). Using neuroeconomics to understand environmental valuation. Ecological Economics, 135, 1–9. [DOI]

[8] Genevsky, A., & Knutson, B. (2015). Neural Affective Mechanisms Predict Market-Level Microlending. Psychological Science, 26(9), 1411–1422. [DOI]

[10] Sawe, N. (2017). Using neuroeconomics to understand environmental valuation. Ecological Economics, 135, 1–9. [DOI]

[10] Genevsky, A., & Knutson, B. (2015). Neural Affective Mechanisms Predict Market-Level Microlending. Psychological Science, 26(9), 1411–1422. [DOI]

[11]McKeever, A. (2020, July 30). How the Americans with Disabilities Act transformed a country. National Geographic. [Link]

[11] Shapiro, J. (Reporter) (2015, July 24). The Americans with Disability Act at 25: How a law to protect disabled Americans became imitated around the world.

[11] Chan, K. M. A. et al. (2016). Opinion: Why protect nature? Rethinking values and the environment. Proceedings of the National Academy of Sciences, 113(6), 1462–1465. [Link]

[11] Kellert, S. R., Wilson, E. O. et al. (1995). The Biophilia Hypothesis. Shearwater.

[11] Kellert, S. R. (1997). The Value of Life: Biological Diversity And Human Society (Reprint ed.). Island Press.

[14] Chan, K. M. A. et al. (2016). Opinion: Why protect nature? Rethinking values and the environment. Proceedings of the National Academy of Sciences, 113(6), 1462–1465. [DOI]

[15] Schuster, R., Germain, R. R., Bennett, J. R., Reo, N. J., & Arcese, P. (2019). Vertebrate biodiversity on indigenous-managed lands in Australia, Brazil, and Canada equals that in protected areas. Environmental Science & Policy, 101, 1–6. [DOI]

[16] Framarin, C. (2010). The Value of Nature in Indian (Hindu) Traditions. Religious Studies, 47(3), 285–300. [DOI]

[17] Tay, P. (2019, April 23). Can Religion Teach Us to Protect Our Environment? Analyzing the Case of Hinduism. Ethics & International Affairs. [Link]

[18] George, J. (2004). The Environment and Environmental Movements in Hinduism in Robin Rinehart, ed., Contemporary Hinduism: Ritual, culture, and practice California: ABC-CLIO, 341-380.

[19] Hindu Declaration on Climate Change. (2015). UN Climate Statement. The Oxford Centre for Hindu Studies.

[20] Encyclical Letter Laudato Si' of the Holy Father Francis: On Care for our Common Home. 2015.

[21] Namibian Const. Art. 95 I

[22] The Constitution of The Kingdom of Bhutan Art. 5 Environment

[23] Constitution of Ecuador Preamble

[24] PRI: The World: Is China really stepping up as the world's new climate leader? [Link]

[25] Mette Halskov Hansen, Hontao Li, Rune Svarverud (2018) Ecological civilization: Interpreting the Chinese past, projecting the global future. Global Environmental Change: Volume 53, November 2018, Pages 195-203. [DOI]

[26] Chang, C., Cheng, G.J.Y., Nghiem, T.P.L. et al. Social media, nature, and life satisfaction: global evidence of the biophilia hypothesis. Sci Rep 10, 4125 (2020). [DOI]

[27] Anna Hausmann Tuuli Toivonen Christoph Fink Vuokko Heikinheimo Ritwik Kulkarni Henrikki Tenkanen Enrico Di Minin. Understanding sentiment of national park visitors from social media data. [DOI]

[28] Duty of Care. (2020). LII / Legal Information Institute. https://www.law.cornell.edu/wex/duty_of_care

[29] Breaches of duty of care in these contexts can result in legal action; for example, if school staff knows that students are engaged in dangerous activity, even though it is outside of class hours and outside school grounds, they may be held legally liable if they do not report or act to prevent this activity. Citation: Duty of Care Policy, Victoria, Australia. [Link]

[30] Earl, G., Curtis, A. & Allan, C. Towards a Duty of Care for Biodiversity. Environmental Management 45, 682–696 (2010). [DOI]

[31] Future Briefs: The precautionary principle: decision-making under uncertainty. (2017). European Commission. Issue 18.

[32] Cameron, J. (1990). The Precautionary Principle: Core Meaning, Constitutional Framework and Procedures for Implementation, in Ronnie Harding & Elizabeth Fisher, Eds. Perspectives on the Precautionary Principle 30 (1990)

[33] Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans.' (2019, August 19). Business Roundtable. [Link]

[34] Our Core Values. (2020). Patagonia. [Link]

[35] Patagonia CEO: A Force for Environmental Change. (2020). Stanford Graduate School of Business. [Link]

[36] 2010 - Present: Sustainable living. (2015). Unilever. [Link]

[37] Ackerman, J.M. (1981). Interest Rates and the Law: A History of Usury. Arizona State Law Journal 61

[38] Persky, J. (2007). Retrospectives: From Usury to Interest. The Journal of Economic Perspectives, 21(1), 227-236. Retrieved September 20, 2020, from [DOI]

[39] State of the Global Islamic Economy Report 2015. (2016, November 13). DinarStandard. [Link]

[40] Jarvela, E. (2019, May 9). Working with Islamic Finance to achieve the SDGs: A win-win? UNDP. [Link]

[41] Askew, K. (2020, August 14). Germany taking lead in support of EU sustainable procurement. Food Navigator. [Link]

[42] Financing a Sustainable Economy: Technical Report. (2020). Taxonomy: Final report of the Technical Expert Group on Sustainable Finance. [Link]

[43] Meehan, J., & Bryde, D. (2011). Sustainable procurement practice. Business Strategy and the Environment, 20(2), 94–106. [DOI]

[44] Backman, F., & Palm, J. (2017). Public procurement of electric vehicles as a way to support a market: examples from Sweden. International Journal of Electric and Hybrid Vehicles, 9(3), 253. [DOI]

[45] GPP Article: Palm Oil and Procurement. (2018). Issue 82. [Link]

[46] United Nations (9 May 1992), United Nations Framework Convention on Climate Change. Article 3.1 "Principles"

[47] Ibid.

[48] CDP Full GHG Emissions Dataset. [Link]

[49] BlackRock: A Fundamental Reshaping of Finance [Link]

[50] In 2013, Generation Investment Management, founded by Al Gore and David Blood, published a report called "Stranded Carbon Assets" which highlighted the risks of investing in carbon intensive assets, a strategy which drove Generation's portfolio construction. In 2015, Generation proved that this could be a viable investment strategy for generating long-term value creation and above market-rate return. This approach to ESG investing led Generation to returns comparable to large private equity and venture firms, with their Global Equity Fund generating an annualized return of 12.41% (as compared to the MSCI World Index's 7.7%). Their success has not gone unnoticed, and has shifted strategies of values-oriented institutional investors. From James Fallows, "The Planet-Saving, Capitalism-Subverting, Surprisingly Lucrative Investment Secrets of Al Gore," The Atlantic, November 2015, p. 86.

[51]Morningstar: Sustainable Funds Continue to Rake in Assets During the Second Quarter. [Link]

[52] Financial Times: Majority of ESG funds outperform the wider market. [Link]

[53] Paulson Institute: Financing Nature: Closing the Global Biodiversity Financing Gap. [Link]

[54] S&P Global: DJSI Index Family. [Link]

[55]DJSI index family. Investment objective and Methodology. [Link]

[56] CSA Weights Overview 2020: SAM Corporate Sustainability Assessment. [Link]

[57] S&P Global: Thermal Coal Companies Removed from the S&P 500® ESG Index in Response to Market Demand [Link]

[58] Banco Mundial: Los bonos verdes cumplen 10 años: un modelo para fomentar la sostenibilidad en los mercados de capital [Link]

[59] Blue Forest Conservation: Forest Resilience Bond [Link]

[60] Moody's: Research Announcement: Moody's - Sustainable bond issuance hits record high in Q2 as social bonds surge. [Link]

[61] Alphabet: Alphabet issues sustainability bonds to support environmental and social initiatives [Link]

[62] Green Bond Transparency Platform [Link]

[63] Nasdaq: Nasdaq Sustainable Bond Network. [Link]

[64] BBVA: BBVA issues the first blockchain-supported structured green bond for MAPFRE [Link]

[65] CalPERS Tops 400 Billion Total Assets [Link]

[66] CalPERS' Governance & Sustainability Principles. 2019. [Link]

[67] The Amsterdam Declaration on Deforestation and the Amsterdam Palm Oil Declaration (collectively, the Amsterdam Declarations) are multilateral commitments that aspire to deforestation-free, sustainable commodities. Launched in 2015 and signed by Denmark, France, Germany, Italy, the Netherlands, Norway, and the United Kingdom, the strategy takes a global value-chain approach for agricultural commodities and seeks to enhance transparency and use of voluntary corporate social responsibility reporting. [Link]

[68] Norway's wealth fund ditches 33 palm oil firms over deforestation. [Link]

[69] Pension Funds Around The World Moving To Abandon Investments In Fossil Fuels. (2020) Palash Ghosh. International Business Times. [Link]

[70] Make My Money Matter [Link]

[71] Financial Performance of Sustainable Investing: The State of the Field and Case Studies for Endowments. Intentional Endowments Network. [Link]

[72] Sizing the Impact Investing Market. Global Impact Investing Network.

[73] NatureVest 2020 Impact Report. [Link]

[74] GRI 304: Biodiversity. [Link]

[75] More Companies Link Executive Pay to Sustainability Targets [Link]

[76] Shell Sustainability Report 2019: Executive Remuneration [Link]

[77] Corporate Board Member: The Many Questions of Tying ESG To Executive Compensation: [Link]

[78] Ibid, Wall Street Journal

[79] UN Principles for Responsible Investment: Integrating ESG Issues into Executive Pay [Link]

[80] David Andersson (2020) A novel approach to calculate individuals' carbon footprints using financial transaction data – App development and design. Journal of Cleaner Production Volume 256, 20 May 2020, 120396. [DOI]

[81] Doconomy helps consumers meet UN climate change goal [Link]

[82] Klima Homepage [Link]

[83] Plastic Bank Indonesia Homepage [Link]

[84] UNFCCC: Alipay Ant Forest: Using Digital Technologies to Scale up Climate Action [Link]

[85]Values Based Banking: Bringing the voice of the citizen into finance. (2015). UNEP Inquiry Working Paper 15/03. [Link]

[86] The Forest Resilience Bond - Blue Forest Conservation. [Link]

[87] Natural Capital Project Homepage [Link]

[88] Zhiyun Ouyang et. al. (2020) Using gross ecosystem product (GEP) to value nature in decision making. Proceedings of the National Academy of Sciences Jun 2020, 117 (25) 14593-14601; DOI: 10.1073/pnas.1911439117

[89] Realizing the values of natural capital for inclusive, sustainable development: Informing China's new ecological development strategy. Hua Zheng, et. al. (2019) Proceedings of the National Academy of Sciences Apr 2019, 116 (17) 8623-8628; DOI: 10.1073/pnas.1819501116

[90] Chris Addy, et. al (2019) Calculating the Value of Impact Investing. Harvard Business Review. [Link]

[91] Intrinsic Value Exchange. [Link]

[92] The future of ESG: A conversation with GPIF Chief Investment Officer Hiro Mizuno. [Link]

[93] Our Planet: Too Big To Fail. [Link]

[94] 2019 Porter Novelli/Cone GenZ Purpose Study. [Link]

[95] What is Extinction Rebellion and what does it want? [Link]

[96] Extinction Rebellion Target Institutions Funding Ecological Destruction in City of London. [Link]

[97] Children urged to strike against lack of action on climate emergency. [Link]

[98] CNN Business: Rio Tinto CEO resigns after destruction of 46,000-year-old sacred Indigenous site [Link]

[99] The Banking Environment Initiative (BEI) and Consumer Goods Forum (CGF)'s 'Soft Commodities' Compact. Cambridge Institute for Sustainability Leadership [Link]

[100] Levi, M. (2018).Toward a New Moral Economy. [Link]