Making Finance Serve Nature

Mapping the Landscape — Summary of Full Report

From the niche of Conservation finance to the mainstreaming of Natural Capital approaches in financial systems
75% of the land surface, 66% of the ocean area, 85% of wetlands (area) has now been significantly altered by multiple human drivers.

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Preface

The destruction of nature and biodiversity is an urgent problem: the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reported this month that human activity is putting a million species at risk and human exploitation of living and non-living natural resources is degrading the ecosystems on which we depend.

This initial paper on Finance for Nature looks at how changes to our economic and financial system might help us to manage natural resources more sustainably. Economists call natural resources ‘natural capital’ and the benefits that they provide to humans ‘ecosystem services’ – these cold terms represent what we must protect to avoid a catastrophic loss of biodiversity, as well as breaching other planet boundaries.

We have adopted them here to engage better with economists and financial policymakers on environment and biodiversity. This does not indicate a preference for market solutions or a desire to commercialise nature. On the contrary, this report makes the strong case that markets cannot solve the biodiversity and nature depletion problems alone; the scale of the problem, the externalities, time horizons, the interconnectedness, and public good aspects are simply too great. Instead, we invite economists, supervisors, central banks and financial policymakers to consider all the tools at their disposal – market and non-market, public and private, conventional and unconventional – in pursuit of the quickest route to protect our environment.

In this fast-evolving and complex area, the aim of this paper is to map the landscape as we currently see it and to open the door for discussions and learning. We have suggested some policy ideas to feed the process and would welcome contributions and challenges as we explore the topic further in the months ahead.

1 DIAZ, S., et al., Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019, IPBES, p. 3
The Convention on Biological Diversity (CBD) 10-year strategic plan for biodiversity conservation, agreed in 2010, concerned that the lack of sufficient financial resources is one of the main obstacles to achieving its objectives, notably suggested the use of a series of market-based instruments – but with limited success.

This is partly because few conservation projects are bankable projects: most have low revenues, low rates of return, and relatively high transaction costs. Only ~ USD 50 billion of conservation finance is being raised annually, a sixth of the estimated global funding need.

And of this, 80 per cent comes not from financial markets but from public and philanthropic sources. In this paper, we explain why we think that scaling up finance for nature will need an approach that considers the bigger picture of the financial system.

A key insight is that the environment is a public good which, by nature, is not well suited to market financing by mainstream private investors. As part of a plan to support an ambitious new CBD strategic plan, to be agreed in 2020 at COP 15, we suggest that making finance serve nature requires the following four-step approach:

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A key insight is that the environment is a public good which, by nature, is not well suited to market financing by mainstream private investors. As part of a plan to support an ambitious new CBD strategic plan, to be agreed in 2020 at COP 15, we suggest that making finance serve nature requires the following four-step approach:

1. **Show political ambition**
   Recent reports by the IPCC and IPBES leave little doubt: the combination of climate change and the depletion of biodiversity and ecosystems puts our societies on the path to environmental collapse. The science-based analysis of both groups calls for a profound transformation of our economic model as the only way to avoid the worst. Young people are calling for immediate action by governments. And rightly so: without additional resources, world leaders can start steering the economy out of fossil fuels and nature-depleting activities. Public subsidies to energy, agriculture, fisheries and other sectors and all public expenditures must be aligned with environmental objectives. Environmental and economic regulation, accounting rules, reporting requirements must be reviewed and enforced to match the scale and urgency of the problem.

2. **Draft a plan to bail-out nature**
   Nature is the ultimate too-big-to-fail. If it goes, the economy – and in fact our very species – goes with it. We cannot wait for the (private) financial system to be re-designed and re-purposed for conservation finance to scale up. A public investment plan must be drawn up and activated using the panoply of mission-oriented financial institutions and tools, including monetary policy, to transform our systems of production and consumption (the good news is that such a plan would mechanically draw in substantial private funds). Trillions were made available to save banks following the last financial crisis. Surely nature deserves the same attention.

3. **Call on central bankers to act on environmental risk**
   While policy-makers around the world, with the EU showing leadership, are looking at ways to align private finance to climate objectives, the most promising push to re-direct mainstream capital flows could come from central bankers. While their considerable monetary policy capacity has to be part of a climate and nature bail-out plan, they also have powerful instruments within the macro-prudential toolbox, which they are contemplating using in relation with climate-risk. The loss of biodiversity and interruption of ecosystem services is a material risk for the financial system – certainly in the long-term, even in the short-term for some investments/sectors – and needs to be included in stress tests by institutions and their supervisors. Macro-prudential instruments should be used to penalize nature-depleting investments where relevant.

4. **Support a science-based toolkit**
   The above three steps all require an approach to measurement that captures the complex interactions between economic and financial activities and biodiversity and ecosystems. Techniques have been developed to value natural capital in biophysical or monetary terms, allowing us to identify unaccounted values and to price in negative environmental externalities that are currently not factored in the value chain and so incorrectly perceived as having no benefit or cost. Tools to measure risks and dependencies should be improved where necessary and their use mainstreamed. Biodiversity and ecosystem services indicators should be used at government, financial and business levels to steer the necessary transition to a sustainable economy.

Show political ambition

Call on central bankers to act on environmental risk

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Support a science-based toolkit
I. The depletion of nature

Biodiversity and ecosystems as a whole are at breaking point. Several ‘planetary boundaries’ are now under threat or even being breached (biodiversity integrity, climate change, land-system change and altered biogeochemical cycle),\(^1\) and part of our stock of natural capital is at risk of depletion.\(^2\) The most recent living planet index found that species population sizes decreased by 60 per cent between 1970-2014.\(^3\) While forest areas are predicted to decline by 13 per cent from 2005 to 2030, land degradation hotspots, mostly in South Asia and Africa,\(^4\) cover approximately 29 per cent of global land and are where 3.2 billion people reside.\(^5\) The UN's latest report charting the outlook for the global environment has highlighted that exposure to water and air pollution “costs at least 9 million lives each year”.\(^6\) According to IPBES 7, land degradation has reduced productivity in 23 percent of the global terrestrial area.\(^7\) Plant diversity in farmers’ fields is decreasing, nearly a third of fish stocks are overfished and some species that contribute to vital ecosystem functions, such as pollinators and soil organisms, are in sharp decline as a consequence of pollution, overexploitation, and degradation of habitats.\(^8\)

Most business models are based on a linear production system, which relies on extraction of raw materials, processes into products, consumption and waste, and assume the ongoing availability of unlimited and cheap natural resources. This is unsustainable because non-renewable resources (e.g. fossil fuels, metals, minerals) are increasingly under pressure, while renewable resources (e.g. forest, soils, rivers), are declining in their availability and more fundamentally, in their regenerative capacity.\(^9\) Meanwhile, the cost of the negative environmental externalities of primary production and primary processing across business sectors has been estimated at a total of USD 7.3 trillion.\(^10\) Incorporating such environmental costs, or negative externalities, in the prices of goods and services is one of the key options to embark on the path towards greater sustainability.\(^11\)

The scope of these issues, and the interdependence between them, implies that no solution can be found without agreement on the diagnosis, the policies that could tackle it, and a hierarchy of targets. During the conference of the parties (COP) to the Convention on Biological Diversity (CBD) in Nagoya in 2010, world governments agreed to a strategic plan for biodiversity conservation, including 20 targets to be met by 2020. They notably aimed at reducing the direct pressures on biodiversity, promoting its sustainable use, safeguarding ecosystems, species and genetic diversity, while also agreeing specific targets — e.g. the restoration of at least 15 percent of degraded ecosystems.

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1. ROCKSTRÖM et al, A safe operating space for humanity, Nature, 2009
2. 2018 living planet UN Global outlook
3. OECD, OECD Environmental Outlook to 2030, 2008
4. UNEP, Global Environment Outlook 6 - Key Messages, 2019
6. IPBES 7, p.2.
9. TRUCOST, Natural capital at risk: the top 100 externalities of business, 2013, p. 8-9

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The finance needs for implementing these 20 Aichi Biodiversity Targets\(^\text{11}\) (ABT) have been estimated to be USD 150-440 billion per year.\(^\text{12}\) In Europe, the financial costs estimated to restore 15% of degraded ecosystems and their services (Target 15 of the ABT) are estimated to range from EUR 0.5 to 11 billion per annum up to 2020.\(^\text{13}\) While these targets have been widely described as too modest in scale to save global biodiversity and ecosystems,\(^\text{14}\) it does not mean that they are being achieved: only four of the 20 objectives have had a positive outcome. The CBD’s Conference of the Parties is expected to update its strategic plan in 2020 — or to adopt a new post-2020 global biodiversity framework.

However, there is no commonly agreed estimation of the cost of a fully comprehensive global conservation program — which would sustainably manage agriculture, forests, freshwater, coastal and marine ecosystem beyond the ABT. The most common estimation is that USD 300 to 400 billion per year is needed worldwide.

While these remain estimates and some discussions exist on the exact numbers, few would disagree with the conclusion: the investment needs are substantial and are at least USD 300 billion per year worldwide.

II. Finance ignoring Nature and the conservation finance niche

In the framework of the various COPs of the CBD, there have been substantial discussions about the use of economic instruments to facilitate extended conservation and sustainable use of biodiversity in order to meet the Aichi Biodiversity Targets.

Based on the fact that public purses are constrained and the assumption in some quarters that public financing cannot be accessed, the CBD classified six mainly market-based mechanisms known as ‘Innovative Financial Mechanisms’ (IFMs): environmental fiscal reform; payments for ecosystem services; biodiversity offsets; markets for green products; biodiversity in climate change funding; and biodiversity in international development finance.\(^\text{15}\) While not being really innovative mechanisms, they are a mix of revenue-raising mechanisms, direct financing mechanisms, and mainstreaming schemes.\(^\text{16}\)
The category of ‘conservation finance’ is the commonly agreed term for the revenue-raising mechanisms from this list. It has been suggested as a way of addressing the shortfall in public funding through a number of different, more or less market-aligned, mechanisms including, among others: Ecotourism; Sustainable agriculture; Sustainable forestry (FSC or PEFC certifications); Green infrastructure (where it leads to the conservation of the provision of ecosystem services, such as flood protection, water supply or soil water conservation);17 or more conceptually debatable mechanisms such as Payments for ecosystems services (payments to land owners or managers to provide or protect ecosystem services, mainly paid by governments), and Biodiversity offsets (mechanisms which range from Ecological compensation to Conservation banking).18

However, the market size of conservation finance is still far from meeting the aforementioned targets: it is estimated at between USD 40 and 53 billion9 at a global level — where 80% comes from non-market sources (the largest part coming from domestic government spending and philanthropic funds) and only 20% comes from market-based activities (13% from green commodities related to sustainable agriculture and forestry such as timber, fisheries, organic foods, etc. and 7% from direct market payments such as carbon offsets).20 In a 2014 report, KPMG estimated the EU28 market size for 2020 of the four main categories of conservation projects that generate revenue: payments for ecosystem services, biodiversity offsets, green infrastructure and small innovative pro-biodiversity businesses (leaving aside Sustainable agriculture and forestry). Their estimation ranged from €73 million (business as usual) to €288 million under a scenario with positive policies.21 As an illustration, the transactions for biodiversity offsets and compensation projects in Europe for the five-year period 2011-2015 amounted to €62.7 million22 while the global annual market size was estimated in 2011 to range from USD 2.4 to USD 4 billion,23 reaching at best only 1% of the global funding requirement.

There are some unsolvable problems with these approaches quite apart from the lack of scale. For example, critics have warned that biodiversity offsets can create dependencies that prolong the harmful activity (such as where restoration work is funded through offsets linked to degradation elsewhere), and that there is often a lack of true substitutability between assets being offset (for example where a complex ecosystem is offset by the expansion of a simpler one).24 Among other problems,25

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17 Examples include: New York City’s GI Plan to decrease sewer management costs by $2.4 billion over 20 years. Source: BROWDER, G., CIMENT, S., REHBERGER-BCESOS, I., GARTNER, T., LANGE, G-M., Integrating Green and Gray: Creating Next Generation Infrastructure, 2019 Washington, DC: World Bank and World Resources Institute

18 Conservation banking is legally mandated biodiversity offsets, modeled after wetland banking. The government however controls this market by creating it and by determining the number of credits (the cap), the initial distribution and commands the demand for the credits, i.e. the rules for who needs to buy credits and how many they need to buy. “Public intervention is not limited to setting the scene, allocating property rights and creating a level playing field. Conservation banking entails a great degree of intervention to award credits, define obligations, and assess habitats.” in: BOISVERT, V., Conservation banking mechanisms and the economization of nature: An institutional analysis, Ecosystem Services, 2015


20 PARKER, C., et al., Ibid.

21 NEATE, V., HIME, S., et al., Ibid.


24 O’NEILL, J., Life Beyond Capital, CUSP essay series on the Morality of Sustainable Prosperity | No 6

25 For example; carbon offsets are often favoured by sectors that do not want to reduce emissions, such as aviation; they can result in lower collection of indirect taxes; they can overstate benefits, as with trees that take 25 years to grow or than absorb less carbon that estimated due to existing climate change effects.
legitimate concerns about ‘green-grabbing’ (the appropriation of land and resources for environmental ends)\textsuperscript{26} and of negative distributional impacts arising from some market-based mechanisms.

These are real concerns and must be considered in the choice of mechanisms promoted, but there is also a more fundamental objection: the environment is a public good which is, by nature, not the bread-and-butter of mainstream private investors. Only some mechanisms related to green commodities (e.g. organic foods, timber) seem really profitable enough to attract private capital. Unsurprisingly, the most common explanation for the lack of private funding for conservation projects is the lack of bankable projects, the relatively low rate of return (specialized fund managers are expecting an IRR of 5–10% in the conservation area), the small size of the projects (the majority are well below USD 5 million and thus not attractive for many asset managers), the lack of clarity on where the revenue stream could come from and relatively high transaction costs (due to complex contractual arrangements).

Recommendations have been made to mainstream the various kinds of conservation projects and to scale them up.\textsuperscript{27} The assumption underlying these recommendations is that a majority of conservation projects could be brought up to an acceptable size and risk-return rate for private investors. While some recommendations such as promoting more homogenous project types or increased transparency go in the right direction and could be promoted, others such as securitization/tranching and the public derisking of private investment (and other risk mitigation levers)\textsuperscript{28} are more questionable options to address the lack of funding for conservation projects.

Following the most optimistic — not to say unrealistic — estimation in 2013, the potential market size for conservation finance projects in 2020 would be around USD 450 to 650 billion — with sustainable agriculture, recreational activities (e.g. ecotourism, park fees), and sustainable forestry expecting to do the heavy lifting with respectively USD 190, 200, and 228 billion.\textsuperscript{29} For sustainable agriculture to reach USD 190 billion in four years would require unrealistic rapid growth; as a comparison, the global market for organic food — a broader and less demanding categorisation — reached only USD 89.7 billion in 2016.\textsuperscript{30}

The first step towards increasing the amount of capital brought into conservation and restoration is to acknowledge what is not working. In this case, it seems fair to say that the majority of the ‘innovative financial instruments’ designed to crowd-in private investments in nature conservation and restoration did not succeed, largely because the value of nature protection is a public good with low financial returns, thus ill-suited to most private finance

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26 ‘Green grabbing’ refers to the appropriation of land and resources for environmental ends. In this specific case of ‘Land-grabbing’, environmental agendas are the core drivers and goals. Whether linked to biodiversity conservation, biocarbon sequestration, biofuels, ecosystem services, ecotourism or “offsets” related to any and all of these. In some cases these involve the wholesale alienation of land, and in others the restructuring of rules and authority in the access, use and management of resources that may have profoundly alienating effects. In: LEACH, M., Green grabbing - The dark side of a green economy, 2012, STEP centre, Green Economy Coalition blog post ; FAIRHEAD, J., LEACH, M., SCOONES, I., Green Grabbing: a new appropriation of nature?, 2012, Journal of Peasant Studies, 39(2), p.237–261


28 HUWYLER, F., KÄPPELI, J., TOBIN, J., Ibid., p.16-18


and ecosystem services — aside from green commodities — is currently considered to be zero and changing this means recognising a hidden cost of economic activities. Even if some proposals to make it an asset class could help bring more transparency and clarity to conservation projects and thus attract specialized impact investors or impact lenders, it does not alter the fact that the main intrinsic characteristics of natural capital and ecosystem services make the projects based on them generally unattractive for private investors: they are projects related to goods or services with the characteristics of public and complex goods.

Until now, neither environmental economic regulation (e.g. pricing, emission standards, quotas) — which are unfortunately relatively weak in most countries — nor conservation finance — which is still a niche — has managed to slow nature’s depletion. Conserving or restoring particular damaged areas, worthwhile as this is, does not imply the systemic scale of move to a more sustainable economy needed to avoid damaging the ecosystem in the first place.

As second-best option to strong environmental economic regulation, finance could help to support a transition to a sustainable economy if it were backed by a regulatory framework capable of turning Finance ignoring nature into Finance supporting nature. What is needed is another approach that: i) integrates environmental concerns at each level of the economic value chain and capital allocation process, ii) overcomes intrinsic shortfalls of our global financial system (e.g. short termism, inability to assess long-term risks) while, iii) unlocking the kind of financial institutions that are the best fit for the purpose (e.g. including public, ethical and stakeholder financial institutions). On this journey, we believed that the intertwined concepts of ‘natural capital’ and ‘ecosystem services’ — if well-used — can provide a useful conceptual lens to build and improve the current economic and financial regulatory framework.

III. Finance supporting Nature: integrating natural capital in financial systems

Thanks to a steadily growing interest in sustainability and the recognition that the scale of the issue calls for fundamental change, a more holistic approach is under development through the conceptual lens of ‘natural capital’ and ‘ecosystem services’.

Natural capital is defined as “a stock of living and non-living, renewable and nonrenewable natural resources (e.g. plants, animals, water, soils, minerals) performing specific ecological functions, and which might yield a flow of potentially valuable goods and services under specific conditions of management”.

31 The lucrative healthier foods market is said to deliver gross profit margins that are as high as 40%, owing to 25% price premiums.
32 Note: the term capital is used as a metaphor: natural capital is not a fungible asset like financial capital. It is instead a way of describing our relationship with nature and measuring and valuing nature’s role so that we can include it in decision-making.
Ecosystem services can be defined as “the ecological characteristics, functions or processes that directly or indirectly contribute to human wellbeing: that is, the benefits that people derive from functioning ecosystems”\(^{33}\) (anthropocentric view).

In economic terms, natural capital is a stock, generating a flow in the form of different ecosystem services to different groups of people. Ecosystem services such as pollination by insects, water purification by wetland habitats, and many others \(^{34}\) can be categorised via a number of scientific classifications\(^{35}\) and are sometimes the result of the interaction of natural, manufactured (built capital), human and social capitals (see Figure 1).

Figure 1: Interaction between Natural, Human, Built and Social Capitals

Because financial reporting has traditionally ignored environmental and social impacts, new methodologies, standards and reporting frameworks involving natural capital, ecosystem services and their valuation have emerged to fill the gap: Natural capital protocol (to integrate environmental concerns into corporate decision-making), Natural capital accounting (e.g. WAVE and SEEA\(^{36}\) for national accounting, and CNCA\(^{37}\) and CARE-tdl\(^{38}\) for corporate accounting), Natural capital risk assessment (e.g. the natural capital risk assessment conducted by Trucost, the tool ENCORE, SCRIPT, the WRI’s ‘Aqueduct’ tool), Natural capital-related disclosure (related to the framework CDSB, <IR>, etc.). Put

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33 COSTANZA, R. et al., “Twenty years of ecosystem services: How far have we come and how far do we still need to go?”, Ecosystem Services 28-A (2017), p. 3

34 The following list represent the main categories: Provisioning services (material outputs from nature, e.g. food and raw materials); Regulating services (indirect benefits from nature generated through the regulation of ecosystem processes such as, climate regulation, water purification, pollination, control of pest proliferation, etc.); Cultural services (non-material benefits from nature) and Supporting services (the fundamental ecological processes support the delivery of other ecosystem services and that allow the development and reproduction of life).


36 The System of Environmental and Economic Accounting (SEEA). This specifically looks at the integration of economic and environmental data to provide a more comprehensive and multipurpose view of the interrelationships between the economy and the environment. The SEEA framework follows a similar accounting structure as the System of National Accounts (SNA).

37 Corporate natural capital accounting (CNCA) uses a balance sheet format for documenting natural capital assets and liabilities by organisations.

38 The CARE (Comprehensive Accounting in Respect of Ecology) model (also called CARE-“Triple Depreciation Line” model), created by A. Rambaud and J. Richard, provides a complete accounting model, made for the operationalization of historical accounting principles (e.g. NC as a ‘credit concept’, depreciation) to extra financial types of capital.
all together, these evolving tools allow us to assess, first, the economic dependence on natural capital and ecosystem services of the entire value chains of most economic sectors; second, to value the benefits and internalize the costs of activities that reduce them; and third, to allow financial institutions to integrate this information in their capital allocation decisions.

**Natural capital valuation** involves both a qualitative and a quantitative valuation, the latter can be either biophysical (e.g. footprint, MKSA), monetary (e.g. direct market valuation or non-market valuation), or both (e.g. integrated valuation frameworks). The idea of valuing aspects of the natural environment raises **valid concerns about how humans see their relationship with nature and its exploitation.** However, attaching monetary and non-monetary value can improve decision-making in ways that protect nature, for example by revealing unaccounted value or highlighting dependencies, impacts and risks that would not otherwise have been considered by policymakers, investors or business leaders.

This could lead to the assessment and integration of negative environmental externalities, that are currently — and incorrectly — perceived as having no cost.\(^{39}\) Accounting for these hidden costs through natural capital valuation and accounting would add a layer of information that goes beyond ordinary ESG disclosure — which lack comparability due to competing methodologies, unequal quality and depth, limiting their usefulness to investors. While a harmonized and consistent framework for ESG disclosure would already be a huge step in the right direction, the natural capital approach seeks to influence underlying economic behaviour by allowing both for the revelation of the hidden costs and dependency and the internalisation of these externalities. The direct consequence of such internalization would be a change in the profitability of businesses, leading to a capital shift from unsustainable towards more sustainable activities.

The natural capital toolbox has improved in the last few years with businesses,\(^{40}\) governments\(^{41}\) and the finance industry\(^{42}\) exploring the potential impacts of environmental risk and dependencies on their own operations and different sectors of the economy\(^{43}\) and how these can be mitigated. Nevertheless, pilot projects were so far mainly motivated by ethical, reputational or opportunistic motivations — e.g. for positioning in a niche market\(^{44}\) — and not because binding regulations required them.

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\(^{39}\) BITHAS, K., Sustainability and externalities: Is the internalization of externalities a sufficient condition for sustainability?, 2011, Ecological Economics, 70(10), p.1703–1706

\(^{40}\) See Natural Capital Coalition Hub for case studies https://naturalcapitalcoalition.org/

\(^{41}\) The main area of work associated with this field is the development of national environmental accounts based on the System of Environmental and Economic Accounting (SEEA). This specifically looks at the integration of economic and environmental data to provide a more comprehensive and multipurpose view of the interrelationships between the economy and the environment.

\(^{42}\) See Natural Capital Finance Alliance work on Advancing Environmental Risk Management https://naturalcapitalfinance.eu/


\(^{44}\) PRITCHARD, R., VAN DER HOST, D., Monetary natural capital assessment in the private sector - a review of current status and research needs, 2018, Valuing Nature Natural Capital Synthesis Report VNPC, p.4
Changes in the financial system are needed to ensure that our economic system remains within the planet’s boundaries, the sustainable development goals are met, and there is continued support for the Convention on Biological Diversity’s 2050 vision “that biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”.

In this regard, the conceptual toolbox and the new set of methodologies build around natural capital and ecosystem services can help significantly as part of a broader ‘Finance for Nature’ agenda. Such an agenda would also require: i) to answer to the intrinsic short termism of a large part of the financial system, and ii) the role of central banks and supervisory authorities, and the unlocking of mission-oriented financial institutions.

IV. Systemic risks: the role of supervisory authorities and central banks

Environmental-related risks need to be integrated into financial risk models in the same way as other factors that can cause financial disruption. Short time horizons mean that financial institutions are unlikely to assess environmental risks until they suddenly became material. Supervisory authorities and central banks therefore have a role to play in helping to identify the physical and transition risks the economy is facing, map the related financial risks, and apply suitable stress tests to capture the full set of environmental-related financial risks. They will need the right tools and policies: to close the data gap, they will need access to relevant data streams and mandatory, harmonised disclosure of environmental dependency, impact and risk by investee companies and financial institutions; to address the time inconsistency problem (tragedy of the horizon), they will need to integrate environmental scenarios and timeframes longer than the usual 3-5 years in financial stress tests, and to address the methodology gap, policymakers including central banks working through the Network for Greening the Financial System will need better modelling of the interactions between the financial system and the environment. Once the risks are assessed, a list of tools and policies can be activated (e.g. systemic risks buffer, sectoral leverage ratio, maximum credit ceiling, collateral framework) that will contribute to shift capital. This will all require political will, building on the traditional justifications for supervisory intervention of tackling financial and macro-prudential risks and correcting market failures.

The global financial crisis showed how quickly risks can spread due to the highly interconnected nature of the financial system and global economy. Much effort since then has been spent on monitoring potential sources of systemic risk and their transmission routes. The risks of climate change are beginning to be integrated into such thinking but environmental risks including loss of biodiversity are a relative newcomer in this area.

To compensate for the short-termism in financial institutions’ risk assessment, supervisory authorities and central banks could play a role in assessing the medium- to long-term risks and impacts of lending practices, hence activating available macroprudential policies and tools to cope with suboptimal allocation of funding towards harmful economic activities.
V. Unlocking ‘Mission-oriented’ finance

While the ‘Grand challenges’ of the 21st century such as climate change and the risk of environmental collapse often require long-term, patient and dedicated capital, there is currently an under allocation of capital towards businesses that follow sustainable and long-term value creation strategies, and towards projects directed at restoring and conserving our stock of natural capital.

This is first due to what has been termed the ‘Tragedy of the horizon’: while environmental related risks may become material only in the medium- to long-term, the financial sector has a limited ability to capture long-term risks within short term risk-assessment frameworks, and most financial institutions are structurally driven by short-time investment horizons focused on short-term returns.

Secondly, a large majority of the required investment to meet these challenges, such as conservation projects, habitat restoration, green and sustainable infrastructures, is needed in projects with public good characteristics; that is, they are non-excludable and non-rival, with positive externalities — features that are generally characterized by inadequate provision of capital. In fact, they are often long-term, potentially risky and comparatively not-so profitable investments. As we saw previously, there are not a lot of conservation finance projects that can deliver a revenue stream and a sufficient return to attract private investment. At the same time, public spending in these public goods is largely constrained in many countries, for an intertwined set of factors.

An opportunity to move beyond the current unsustainable status quo in which ‘private is not interested’ and ‘public cannot’ is to explore innovative ways to make public and private interact, such as ‘mission-oriented finance’, and to promote models of financial institutions more prone to long-term investment. Getting the transition on track will involve the whole range of mission-oriented financial institutions, public or stakeholder-governed, for which climate change, nature preservation and the Sustainable Development Goals are not a risk or an opportunity among others, but their key focus.

VI. Conclusion

Much of the human-caused damage to biodiversity and ecosystems is the result of ‘normal’ economic activities that have unaccounted environmental costs. Avoiding or reversing this damage will involve bringing these costs into decision-making, which requires new ways to measure environmental impact and risk. It will need new accounting methodologies and disclosures, market interventions and restrictions to change behaviours, as well as public and innovative financing for conservation activities that can bring large environmental benefits but little immediate financial return. Attempts to financialise these processes should be viewed with caution, as should market innovations such as offsets that fail to change underlying economic activity. Looking ahead to the next CBD in 2020, the overall response will need an open-minded and creative policy approach and political commitment.

45 ‘Mission-oriented policy’ focuses on problem-specific societal challenges, which many different sectors interact to solve. On the financial side, this comes with a rethinking of the role of government and public policy in the economy and their interaction with private actors at many levels of the value chain. This concretely means for policy-makers to be more future focused, and go hand-in-hand with a rethinking of the role of State Investment Banks (such as KfW, CDC, ICO, CDP) which has to move beyond a role of ‘fixing market failures’ towards a role of creating and shaping new markets. More information: MAZZUCATO, M., PENNA, C.C.R., 2014, Ibid.
1. Finance ignoring nature

Finance supporting nature – the big picture

The risk of environmental collapse, resulting from natural capital depletion, is more and more described as a **systemic risk**: i) intrinsically systemic because of complex mapping of interdependence and interconnectedness between elements of the ecosystem, ii) but also potentially financially systemic because the financial system shares the same characteristics and risks of contagion. Consequently, there is a need to assess risks at the aggregate level, requesting central banks and supervisory authorities to map these risks, models their interactions with the economic and financial system, and, most of all, to mitigate them by finally acting on the causes.

As private financial institutions are driven by a simple *risk/return* ratio, shifting capital involves changing this ratio. There is therefore a need, first, to enhance the financial sector’s understanding of risks related to natural capital depletion and, second, to impact the return expected from activities they invest in by showing the hidden...
costs of economic activities and internalizing these negative externalities in the production cost. If investing in environmentally harmful activities finally leads to lower returns and more risk than sustainable activity, financial institutions will automatically shift their investment.

But ‘Finance’ cannot see, think and act long term when structural characteristics are incentivizing financial institutions to think and act short-term. A prerequisite to a ‘Finance supporting nature’ will then be to solve this ‘Tragedy of the horizon’.

As private finance is generally ill-suited to conservation finance, there is a need to unlock ‘mission-oriented’ financial institutions: that is financial institutions which do not only follow a logic only of profit, but also answer to a public interest ‘mission’ (public and development banks) or to social and environmental criteria (ethical banks and impact investors).
Policy ideas

1. **Broaden the scope of the Network for Greening the Financial System (NGFS) to integrate environmental risks**

   Central banks and supervisors already plan to assess climate-related risks and integrate them into prudential supervision, having acknowledged them as a source of financial risk (e.g., mapping risks, conducting stress tests, releasing guidelines). During the next CBD, governments should request central banks and supervisors also to include natural capital (or environmental) related risks: the mechanisms, sources of risk and tools are so close to climate-related risks that it makes sense to include the full range of environment-related risks.

   As a first and easy step, **financial supervisors and central banks should request financial institutions to disclose how they are taking natural capital-related risks into account**. They should also conduct environmental-related stress test to assess the risks. Once the financial risks are assessed, central banks and supervisors should use their macro-prudential tools (e.g., systemic risks buffer, sectoral leverage ratio, maximum credit ceiling) and monetary policy (e.g., collateral framework) to incentivize a shift from unsustainable towards sustainable activities, reducing the (systemic) risks required by their mandates.

2. **Create an international Taskforce for Nature-related Financial Disclosure**

   The G20’s Task Force on Climate-related Financial Disclosure (TCFD) could serve as a model for a new taskforce on nature-related, or environmental, disclosures. The new taskforce could serve as a knowledge-sharing platform to improve and harmonise methodologies for assessing both businesses dependencies and impacts on natural capital, and natural capital related financial risks.

3. **Support better data collection to close the data gap**

   Acting as a one-stop shop, an international platform integrating government agencies, international organizations, data centres and science institutes to share information and methodologies about natural capital could help to make data on natural capital more accessible, harmonised, and of even quality, thus improving the measurement of biophysical and monetary values used in natural capital accounting, reporting and decision-making. As multiple types of value co-exist (e.g., ecological, cultural, monetary), integrated valuation frameworks that allow the consideration of trade-offs should be preferred.
**Help natural capital accounting to become mainstream by carefully settling the methodology**

Various models exist for corporate natural capital accounting. To ensure a consistent way of showing hidden costs and externalities, there is a need to settle the methodologies and consider how to integrate them with financial accounting practices (e.g. inside IFRS/US GAAP or not). This will need care to avoid negative incentives (e.g. the distinction between representing natural capital as a stream of future receipts or as a liability which has to be maintained).

**Help natural capital accounting to become mainstream in national accounts and ensure it is used to inform policy making and economic development strategies**

As an important component of a national economic development strategy in a “beyond GDP” agenda, a growing number of countries integrate natural capital accounting in their national accounts. More should do so, disclose how, and use it in their public policy decisions.

**Request listed companies to assess and disclose their interaction with natural capital**

As settled methodology is now available, companies can more easily assess their dependencies on natural capital, the associated risks, and the impacts of their operations on natural capital. Meanwhile, companies that undertook natural capital assessments so far mainly did so for reputational or ethical reasons. The next necessary step will be to require mandatory and harmonised disclosure, integrated with financial reporting, as a pre-condition for financial institutions, policy makers and supervisors to take this dimension into account.

**Mandate and capitalise public and development banks to expand funding towards ambitious CBD objectives**

Public and development banks can provide funding that the private sector will not, for example because most conservation projects have public or common goods characteristics with low financial returns, or long-term payback periods (the ‘Tragedy of the horizon’). Governments should review the mandates of public finance institutions to match CBD and Paris Agreement objectives, and remove potential barriers to their expansion.

**Align corporate, investor and supervisory horizons to the long term**

Measures to tackle financial short-termism have been proposed but rarely adopted. Ideas worth considering include better disclosure of portfolio churn, tax and governance incentives for longer ownership periods, longer-term remuneration structures for company directors and asset managers, less quarterly reporting by companies, less annual benchmarking by asset managers, revisions to accounting standards (including addressing issues related to the use of ‘fair value’ accounting), and revisions to the supervisory toolkit (e.g. expanding stress test time horizons).
About Finance Watch

Finance Watch is an independently funded public interest association dedicated to making finance work for the good of society. Its mission is to strengthen the voice of society in the reform of financial regulation by conducting advocacy and presenting public interest arguments to lawmakers and the public. Finance Watch’s members include consumer groups, housing associations, trade unions, NGOs, financial experts, academics and other civil society groups that collectively represent a large number of European citizens. Finance Watch’s founding principles state that finance is essential for society in bringing capital to productive use in a transparent and sustainable manner, but that the legitimate pursuit of private interests by the financial industry should not be conducted to the detriment of society. For further information, see www.finance-watch.org